(110) Brinkley, Tracy M.
Ross, Steven S.
Smith, Lisa M.
Mosher, Linda E.
Lillie, Karin J.
Butler, Mark W.
Wang, Alan
Sheikh, Yasir A.M.
Harlocker, Susan L.

(120) COMPOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS OF BREAST CANCER

(130) 61/121,410,613

(140) US
(141) 2009-10-26

(160) 326

(170) FastSEQ for Windows Version 4.0

(210) 1
(211) 363
(212) DNA
(213) Homo sapien

(400) 1
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ttt 363

(210) 2
(211) 121
(212) PRT
(213) Homo sapien

(400) 2
Leu Glu Thr Gln Leu Gly Pro Asn Trp Asp Pro Asn Thr Ser Met Gly
1 5 10 15
Gly Arg Thr Thr Asp Asp Thr His Arg Tyr Leu Leu Val Gly Ile Gln
20 25 30
Gly Ala Ala Gln Lys Thr Ile Leu Asn Leu Ser Lys Ala Ile Thr Val
35 40 45

Xaa Lys His Asp Xaa Ser Xaa Gly Val Xaa Leu Xaa His Leu Xaa Xaa Xaa

Ala Lys Arg Xaa Lys Thr Xaa Xaa Asp Leu Ala Ala Xaa Xaa Xaa Asn Xaa

His Ala Leu Asn Leu Ala Phe Val Ala Xaa Ala Ala Xaa Asp Xaa Lys

Arg Lys Leu Xaa Lys Leu Xaa Gly Phe Tyr Trp Asn Xaa Tyr Xaa Xaa

Ala Phe Arg Asp Ser Leu Lys Gly Phe

<210> 3
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<220>
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tcttcaaagc ctaacagatc aagcagctct ccggtgccca acctgcgccc aggtaaatgc 180
caaaaaaagt cctaaacccn gcccaggcca ccgtctccaa gaaaactcac caggagaaaa 240
gtgggaaatt gactttacag aagtaaaaat acacgggtnt gggtacaaat acctttctgt 300
actggtagac acctttctcg natggactga agcattttgt acccaaaacg aaactgtcaa 360
tatggtagtt aagttttttc tcaatgaaat catcccctga cgtgggctgc ctgttgccat 420
agggtctgat aatggaacgg ccttcgcctt ytctatagtt taatcagtca gtaaggcgtt 480
aaacatttaa tggaagtccc attgtgccta tcgacccaga gctctgggca agtagaacgc 540
atgaactgca cctaaaaaaa acactcttac aaaattaatc ttaaaaacng gtgttaattg 600
tgttagtctc cttcccttag ccctacttag agttaaggtg caccccttac tgggctgggt 660
tctttacctt ttgaaatcat nttttnggaag gggctgccta tctttnctta actaaaaaan 720
gcccatttgg caaaaatttc ncaactaatt tntacgtncc tacgtctccc caacaggtan 780
aaaaatctnc tgccctttcc aaggaaccat cccatccatt cctnaacaaa aggcctgccn 840
ttcttccccc agttaactnt tttttnttaa aattcccaaa aaangaaccn cctgctggaa 900
aaacnccccc ctccaanccc cggccnaagn ggaaggttcc cttgaatccc ncccccncna 960
anggcccgga accnttaaan tngttccngg gggtnnggcc taaaagnccn atttggtaaa 1020
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<210> 4
<211> 1087
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> 1...1087
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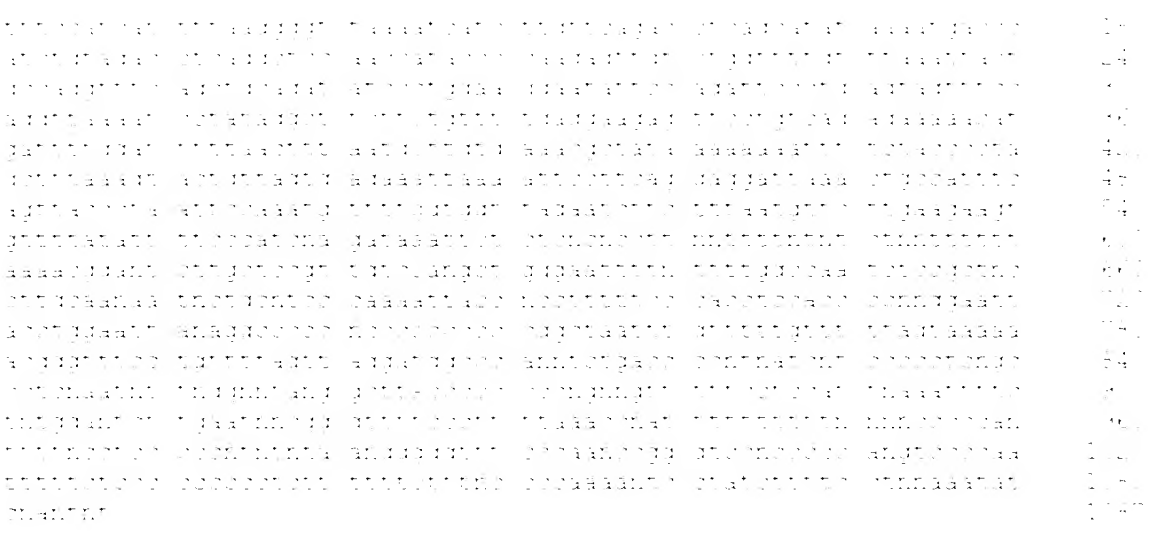

<210> 5
<211> 1010
<212> DNA
<213> Homo sapien

<220>
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<223> n = A,T,C or G

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aatgtcccnn gaaccctctn cntnctgccc aaaacctacc taaatttnctc nctangnntt 600
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ntatnntggn cccnnaaaaa nnnatcnncc cnaattgccc gaattggttn ggttttttcct 720
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ttcctaaaaat taaaaaaatan cgggtttnngg nnggpctctt tpcpctcpng gnggggnngng 900
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<210> 6
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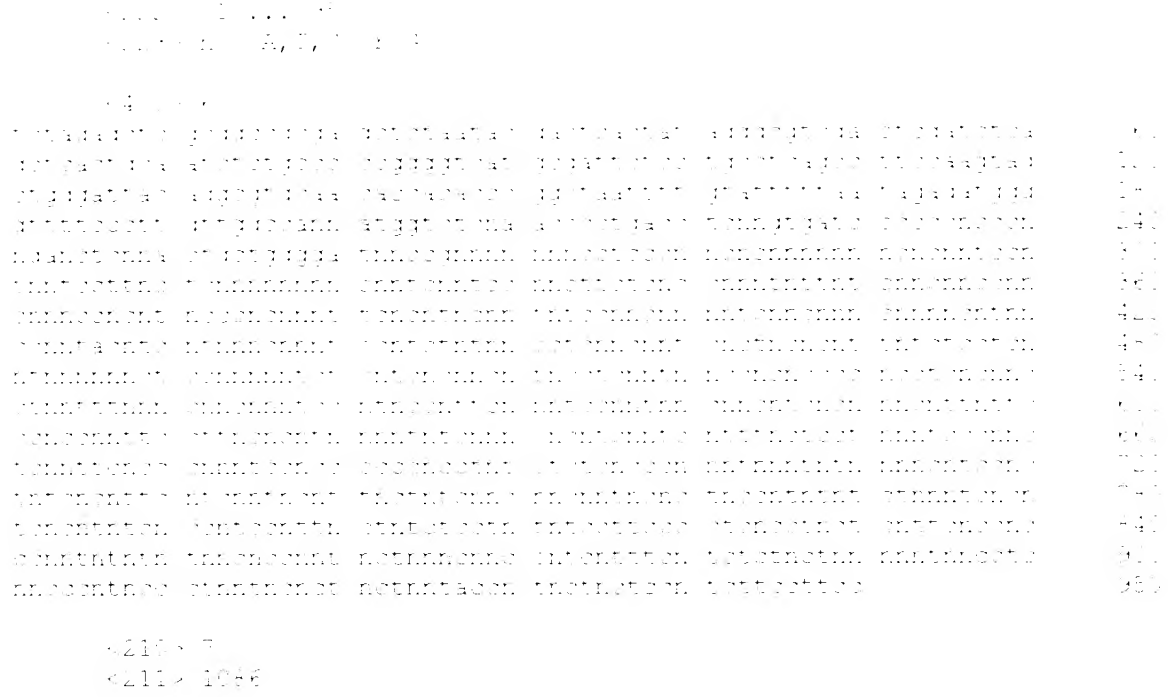
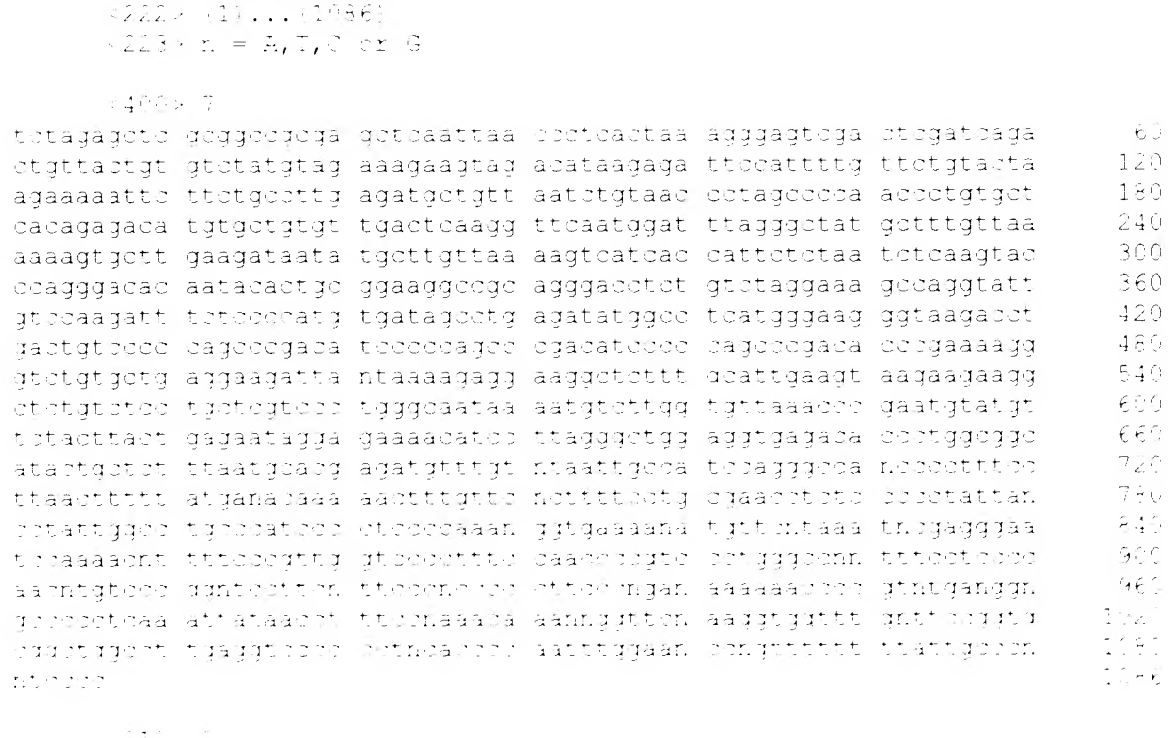
<213> Homo sapien

<220>
<221> misc_feature





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<213> Homo sapien

<220>
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<400> 9

[illegible]

<210> 10
<211> 548
<212> DNA
<213> Homo sapiens

<400> 10
[illegible]

<210> 11
<211> 196
<212> DNA
<213> Homo sapien

<400> 11
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gggggatcgc cttgagccca agatttcaag actagtctgg gtaacatagt gagaccctat 120
ctctacgaaa aaataaaaaa atgagcctgg tgtagtggca cacaccagct gaggagggag 180
aatcgagcct aggaga 196

<210> 12
<211> 388
<212> DNA
<213> Homo sapien

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<222> (1)...(388)
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<400> 12
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<211> 14
<212> DNA
<213> Homo sapiens

<220>
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aaaatcatat ttcatatttt angctgagg gttttaccng gttcctttt acactttta 180
aaacagtttt taagtcattt gcaacaagat attttttctt tcctggcagc tttaacatt 240
atagcaaatt tgtgtcctgg ggactgctgg tcactgtttc tnacagttgc aaatcaaggc 300
attgtcacc aannaaaaaa aattttttng tttnnttga aattggacng gatnaaaggt 360
gtttggagcg gctgctgtat angttttaa atggtttatt gcacctcctt aagtttnnnt 420
tatgtgggcg gggcnttttg natagaaagt ntttantcac anagtcacag ggactttnnt 480
ctttggnna ctgagctaaa aagggctgnt ttcgggtgg gggcagatga aggctcacag 540
gaggcctttc tcttagaggg gggaactnct a 571

<210> 15
<211> 548
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(548)
<223> n = A,T,C or G

<400> 15
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tccccgaccc ccaatgaaaa ttcacactcct aactttcaca ctaaccaaat tttacnnccc 180
aatttttgtt ttttttccca tnactttttt tttttttttt ttttttttgg agatggagtt 240
tgctctttcg tcnnaggttg gagtgcagtg gcgcaatctc ggctcactgc aagctccgcc 300
tcccgggttc acgccattct cctgcctcag cctcccgagt agctgggact acaggcgccc 360
gccaccacgc ccggctaatt tttgtatttt tagtagagac ggggtttcac catgttagcc 420
aggatggtct cgatctcctg acctcgtgat ccgcccgcct cggcctccca aagtgctggg 480
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aaaaaaaa 548

<211> 17
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
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gtgcgcggcg attgggctgt ttatctcaaa cacgccacg gcggtgctga tggcgcctat 120
tgccttagcg gcggcgaagt caatgggcgt ctcaccctat ccttttgcca tggtggtggc 180
gatggcggct tcggcggcgt ttatgacccc ggtctcctcg ccggttaaca ccctggtgct 240
tggccctggc aagtactcat ttagcgattt tgtcaaaata ggcgtg 286

<210> 18
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<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(262)
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<400> 18

<211> 294
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(294)
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tcgggattag tatgaattct gttgtgaaaa tattcgcggc cttcgttcga cgatgtcgcg 180
tcgaaaatct cgaacttcct acgatcgaag tcttcgtcgg cgacgatcgc ggtcagttcc 240
gccgcacgga aatcatgcct gagcggaatc ttgncgccna agncttcgct tgtt 294

<210> 21
<211> 268
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(268)
<223> n = A,T,C or G

<400> 21
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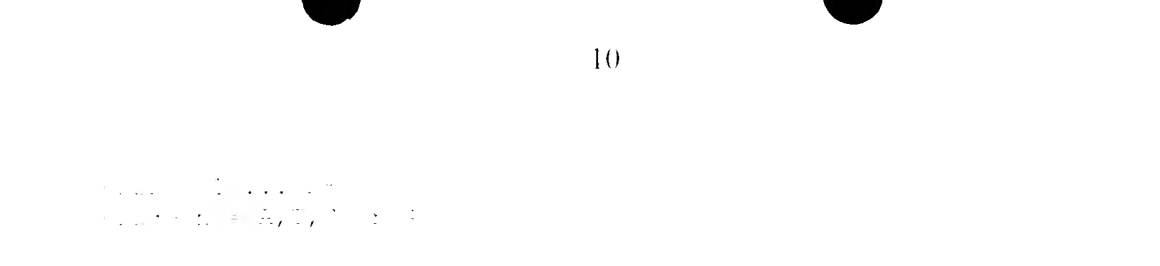
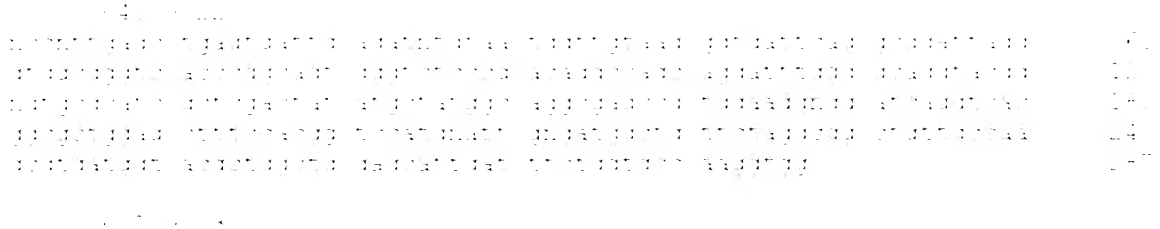
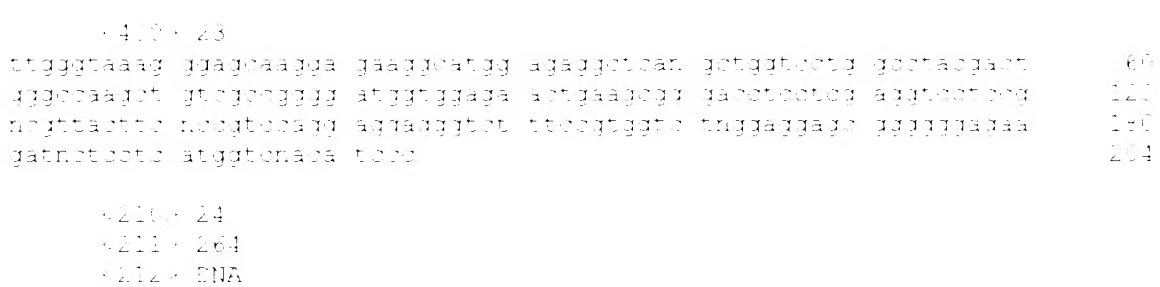
gttctgatgg ancaaggcaan gaggtcgttga gacgattggn attntcgttc ggtcttctgc 180
cgactagtcg nttgcnnang atctttat 208

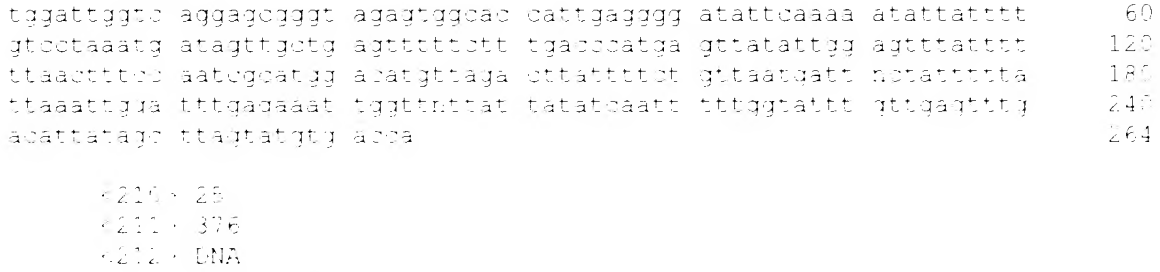
<210> 22
<211> 247
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature









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tgataatatg ggtccgtgct taatacaact gagacatatt tgttctctgt ttttttagag 180
tcacctctta aagtccaatc ccacaatggt gaaaaaaaaa tagaaagtat ttgttctacc 240
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atgaaattgg ttggtctttt gggataagaa attcccaact cagtgtgctg aaattcacct 360
gacttttttt gggaaaaaat agtcgaaaat gtcaatttgg tccataaaat acatgtttact 420
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<210> 28
<211> 439
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(439)
<223> n = A,T,C or G

<400> 28
[illegible]

[illegible]

<210> [illegible]
<211> [illegible]
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<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(2[illegible]
<223> n = A,T,C or G

<400> 29
[illegible]

<210> 30
<211> 100
<212> DNA
<213> Homo sapien

<400> 30
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<210> 31
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<212> DNA
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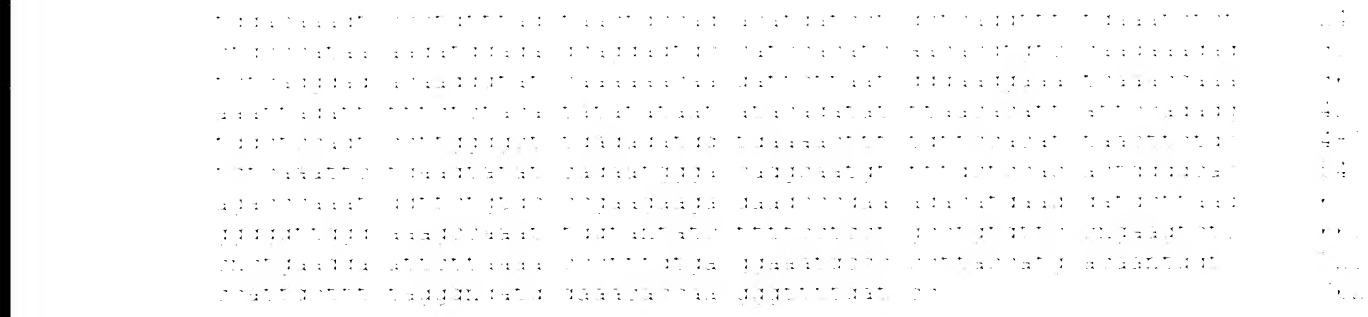

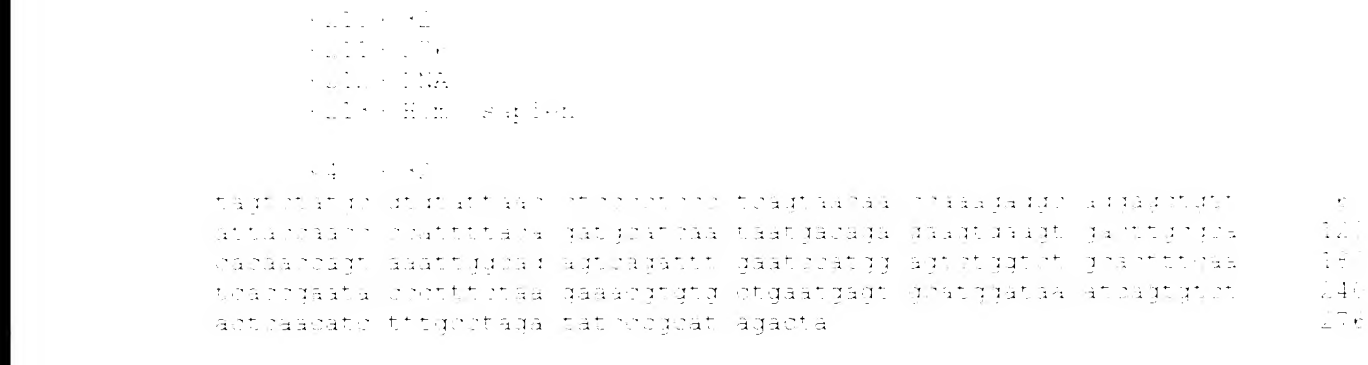

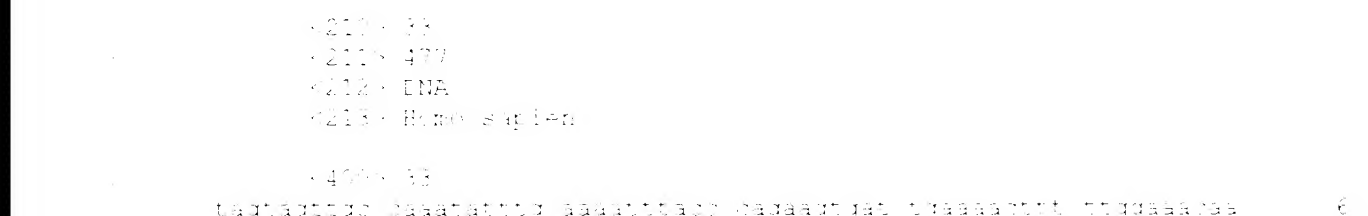

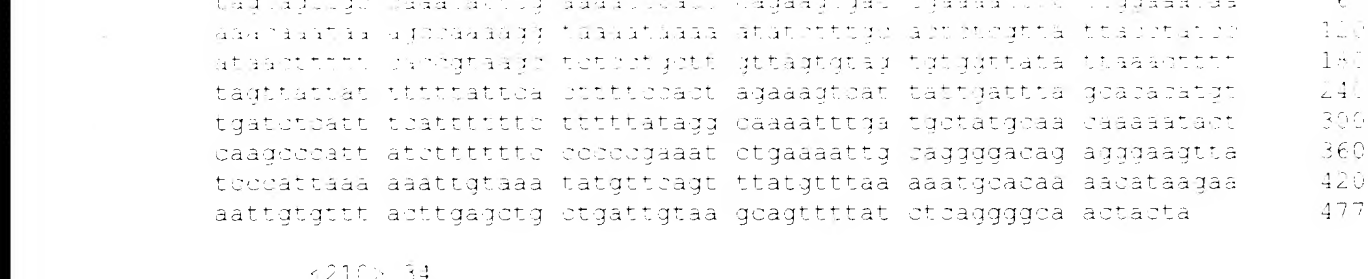

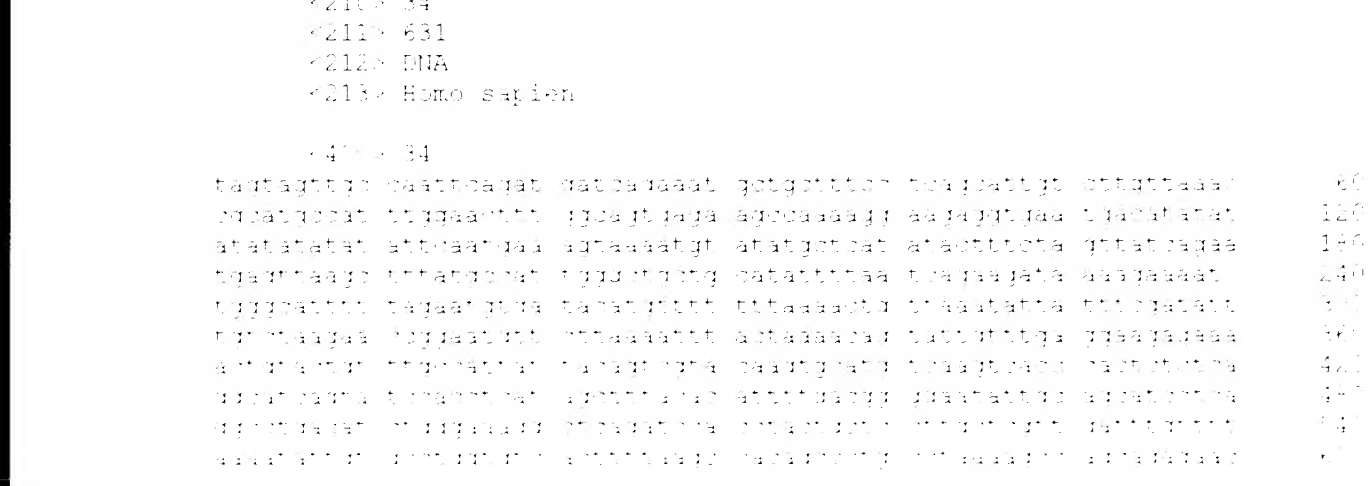

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<212> DNA
<213> Homo sapiens

<400> [illegible]
[illegible]

<211> 586
<212> DNA
<213> Homo sapiens

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tggatggagt ttttgtgtaa tttaaaatct tgaagtcatt ttggatgctc attggttgtc 480
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<210> 37
<211> 716
<212> DNA
<213> Homo sapien

<220>
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<222> (1)...(716)
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<400> 37

[illegible]

[illegible]

<210> 38
<211> [illegible]
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...([illegible])
<223> n = A,T,C or G

<400> 38
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aaaaaaaaaa actaaacaaa tcaaaacata ttaacagtaa agagttctaa aaaatttaca 180
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aacagagaaa cttgatgaan agttgtactt ggaatattgt ggattttttt ttttgtctaa 300
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tgtagggacc tttacaattt catgcactca gaaaacatgc ttgaagagga ggagaggacg 480
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<210> 39
<211> 585
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(585)
<223> n = A,T,C or G

<400> 39
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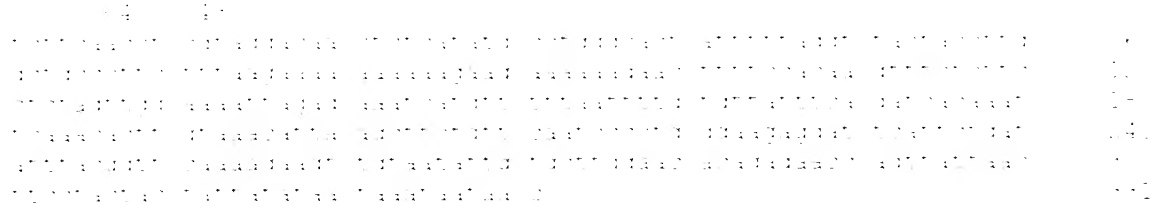
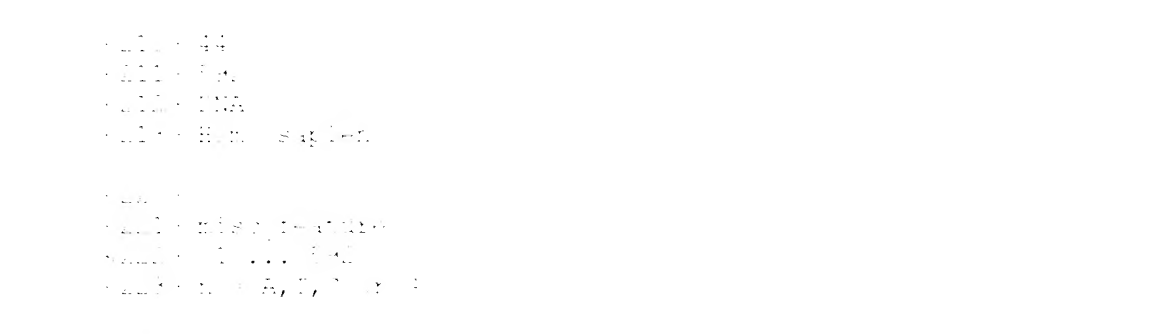
<210> 40
<211> [illegible]

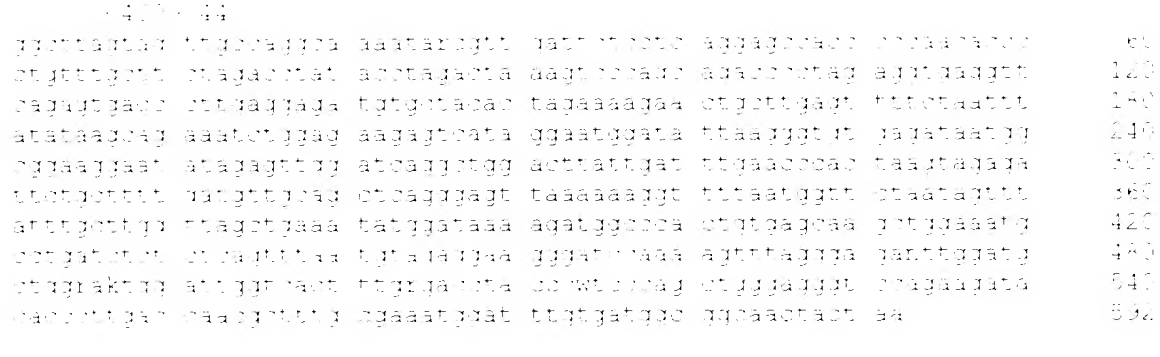
<400> 41

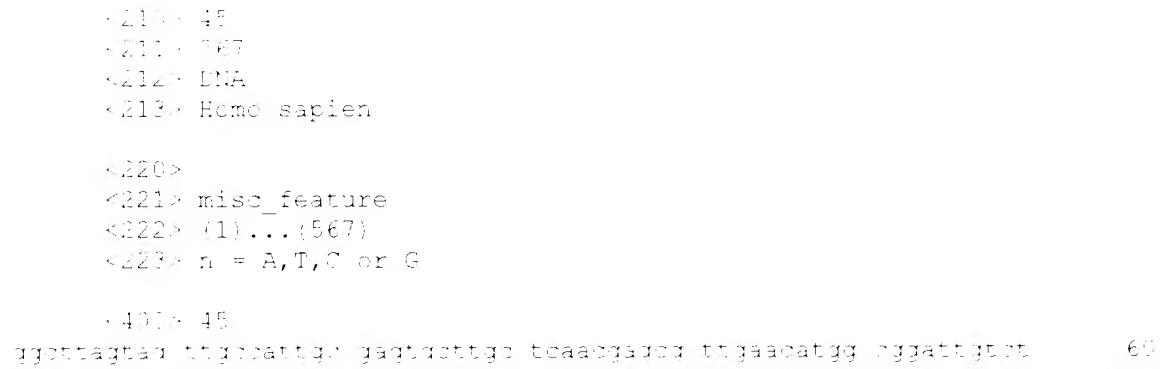
<400> 42

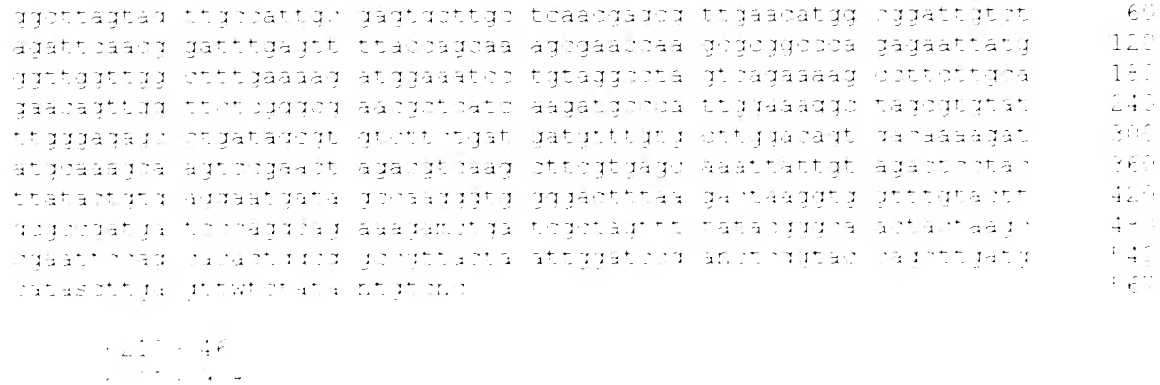
<400> 43







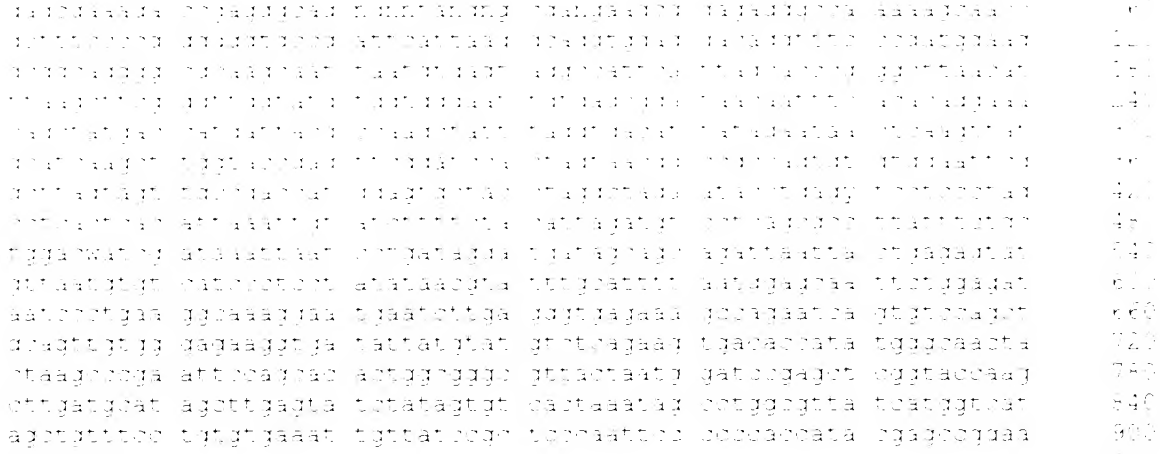




<211> DNA
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(480)
<223> n = A,T,C or G

<400> 46



<210> 47
<211> 480
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(480)
<223> n = A,T,C or G

<400> 47

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ggtttttaag gttgttttct gtcaaataac tctaacttta agccaaacag tatatggaag 120
cacagataka atattacaca gataaaagag gagttgatct aaagtaraga tagttggggg 180
ctttaatttc tggaacctaa gtctccccat cttcttctgt gctgaggaac ttcttggaag 240
cgggattcct aaagttcttt ggaagacagt ttgaaaaccа ccatgttgtt ctcagtacct 300
ttatttttaa aaagtaggtg aacattttga gagagaaaag ggcttggttg ajatgaagtc 360
ccccccccc ctttttttct ttttagctga aatagataan ctatgttnaa rgaarggatt 420
attatttacc atgccaytar scdcatnctc nttgatgggc nyctccstac ccncottaag 480

<210> 48
<211> 541
<212> DNA
<213> Homo sapien

<400> 48

aaaaaaaaaa aaaaaaaaaa tttggtttta ctaattttct gtggctagtc tttttgtttt 60
tgtttaatat tatgaaaatt aaatcaaatt ttttttttct ttttttttct ttttttttct 120

[illegible]

<210> 48
<211> 468
<212> DNA
<213> Homo sapien

[illegible]

<210> 49
<211> 463
<212> DNA
<213> Homo sapien

[illegible]

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caattgctgg ttttgaaatc gtactcttca aaggtatttg tgcagatcaa tccaatagtg 180
atgccctgta ggttttgtgg actgcccacg ttgtctacct tctcatgtag gagccattga 240
gagactgttt ggacatgcct gtgttcatgt agccgtgatg tccgggggcc gtgtacatca 300
tgttaccgtg gggtggggtc tgcattggct gctgggcata tggctgggtg cccatcatgc 360
ccatctgcat ctgcataggg tattgggggg tttgatccat atagccatga ttgctgtggt 420
agccactgtt catcattggc tgggacatgc tgttacccct tta 463

<210> 51
<211> 399
<212> DNA
<213> Homo sapien

[illegible]

<210> 52

<211> 17
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(17)
<223> n = A,T,C or G

<400> 53
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tgcatttttc nacanacaaa attcaaatga ntggaagaaa ttgtgcanagt at 112

<210> 55
<211> 225
<212> DNA
<213> Homo sapiens

<400> 55

<211> 1?
<212> DNA
<213> H.. ..apien

<400> ??
[illegible]

<210> 57
<211> 2??
<212> DNA
<213> Homo sapien

<400> 57
[illegible]

<210> 58
<211> 211
<212> DNA
<213> Homo sapien

<400> 58
ttttgaaagt gaacgtgtag gtagcgggat tcacaaattg ggaactgtca aagacgaatt 60
aaatgattcc gatcaatcaa atgtgactga ggaaaaacct gaggttgaag aacatattcc 120
agtggcagat actgaaaata agtagaatga agttgaagag gtaaaagagt agggtcaaaa 180
agagatgact ttggatgggt gttaaatggc t 211

<210> 59
<211> 208
<212> DNA
<213> Homo sapien

<400> 59
gctcctcttg ccttaccaac tttgcaccca tcatcaacca tgtggccagg tttgcagccc 60
aggctgaaca tcagggggct gcctgcaaat acttcatgct gttgctgctg actgatggtg 120
ctgtgaccga tgtggaagcc atcatgtgag ctgtggtgcg tgcctcgaac ctgccccatg 180
tagtgatcat tatgggtggt aaaatggct 208

<210> 60
<211> 171
<212> DNA
<213> Homo sapien

<400> 60
[illegible]

<210> ??
<211> 1?

<211> DNA
<213> Homo sapien

<400> 62
agagggtaca tatgcagtat tatatagaat aatagtgtca ctgagagtaa tttcatcaag 60
ccattttaat taataattga tagattcaag gctcaacaca ggtgtgaggg attccagttc 120
ctaagctcct tattggtaac ctctt 145

<210> 63
<211> 297
<212> DNA
<213> Homo sapien

<400> 63
tgcactgaga gtaattcaaa tggtttatgc caaagaacaa accagtccta ttcagcctaa 60
ctcatttgtt tttgggtagc aaagccatgt agatggtgat taggcagtag atgatccttc 120
ctaaagtcag ggcatggtgg gtcaggtaaa gcatttggtc aggcaggctt cgtttcaggt 180
agacgggcac acatcagctt tctggaaaaa ctttgtagcc tctggagctt tgttttttcc 240
agcataatca tacactgtgg aatcggaggt cagttttgtt ggtaaggcaa gaggagc 297

<210> 64
<211> 300
<212> DNA
<213> Homo sapien

<400> 64
gcactgagag gaacttctaa tactatgttg aataggactg gtgagaaagg gcatccttgt 60
cttgtgcggg ttttcaaagg gaatgcttcc agcttttgcc cattcagtat aatattaaag 120
aatgttttac catttctgct cttgcctgtt tttcngtgtt tttgcttggc tcttcattcc 180
gcatttttag gcttttacat gttaggaata tatttcttct aatgatactt tacctttgct 240
atcttttgtg agactctact catagtgtga taagcactgg gttggtaagg caagaggagc 300

<210> 65
<211> 273
<212> DNA
<213> Homo sapien

<400> 65

<210> 67
<211> 144
<212> DNA
<213> Homo sapien

<400> 67
gcactgagag gaacttctag aaagtgaaag tctagacata aaataaaata aaaatttaaa 60
actcaggaga gacagcccag cacggtggct cacgcctgta atcccagaac tttgggaggc 120
tgaggaggca tcacccg 137

<210> 68
<211> 137
<212> DNA
<213> Homo sapien

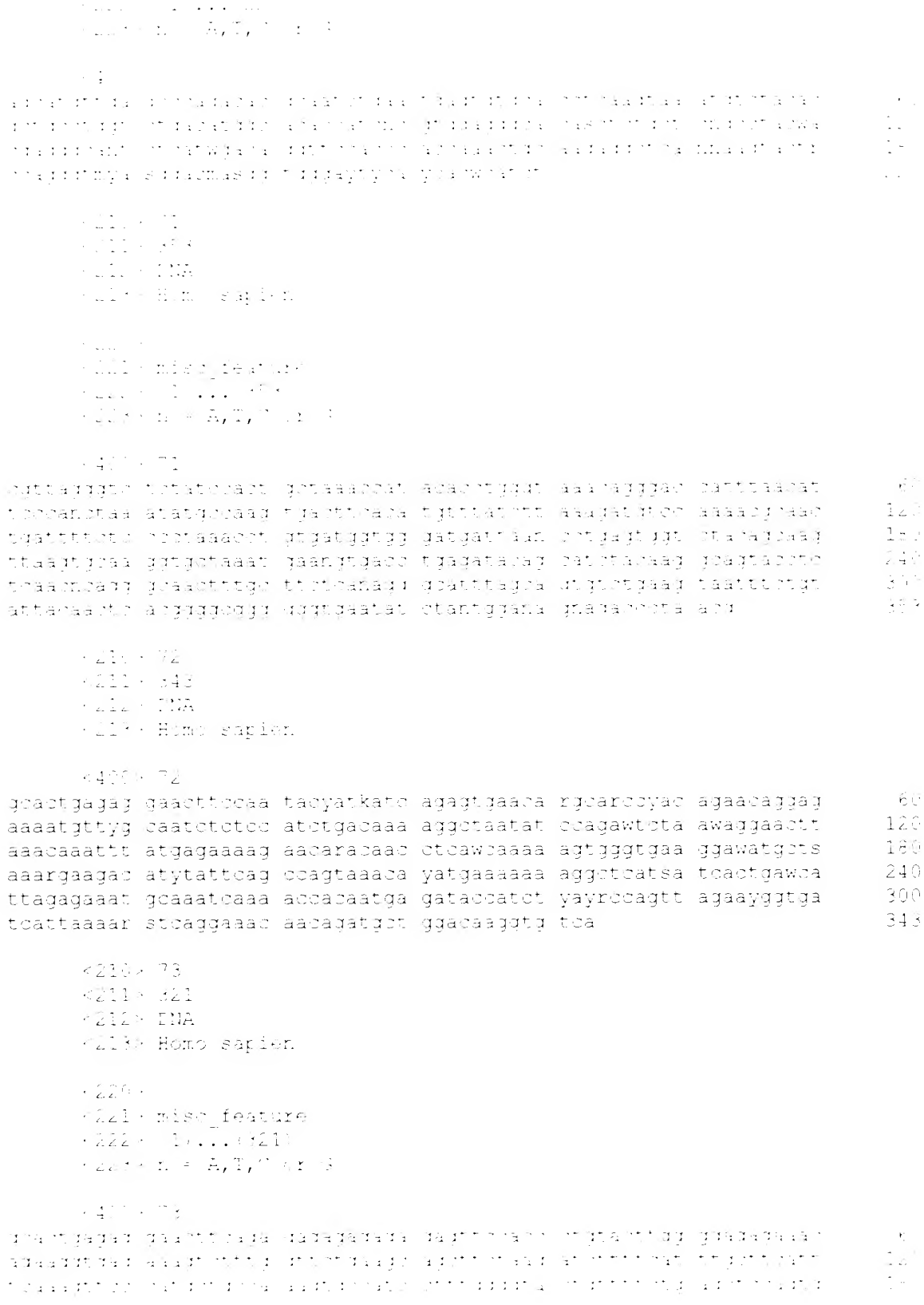
<400> 68
gcactgagag gaacttctag aaagtgaaag tctagacata aaataaaata aaaatttaaa 60
actcaggaga gacagcccag cacggtggct cacgcctgta atcccagaac tttgggaggc 120
tgaggaggca tcacccg 137

<210> 69
<211> 137
<212> DNA
<213> Homo sapien

<400> 69
cgggtgatgc ctgtcccagg ctgtattttg agactatcga ctggacttct tatcaaactga 60
agaatcgttt aaaaatacca gttgtattat ttctacttgt caaaatcgat tttaaaatgtt 120
gaagttcttc tcactgc 137

<210> 70
<211> 22
<212> DNA
<213> Homo sapien

<400>
<223> Primer



<400> 74

<210> 75
<211> 412
<212> DNA
<213> Homo sapien

<400> 75
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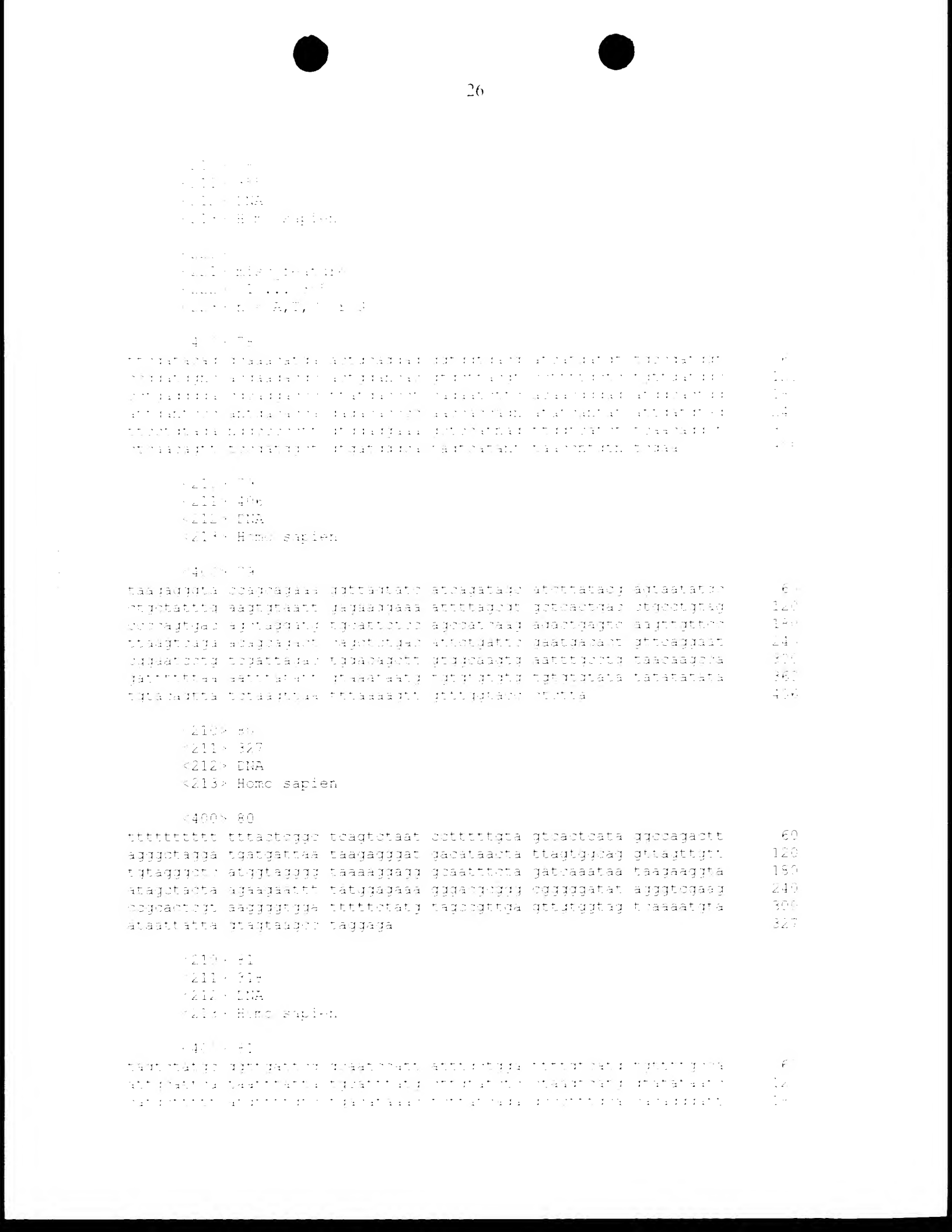
agtcagataa cattagcttc ctgatatgca aaatgagagt gaaaagtact catggcttaa 180
ttgttttgag gattagaaaa atatctgtga tgtgagtaaa attcaatttg tatttcattt 240
ctctcttcta aatttaaata atagggattt tagtgtgtga attttcagac cacaaaatgt 300
gagtggatag agacctt 317

<210> 76
<211> 244
<212> DNA
<213> Homo sapien

<400> 76
cgttagggtc tctatccact cccactactg atcaaactct atttatttaa ttatttttat 60
catactttaa gttctgggat acacgtgcag catgcgcagg tttgttgcat aggtatacac 120
ttgccatggt gattttgctg acccatcagt ccatcatcta cattaggtat ttctctaaat 180
gctattccta cctaggccac ttatacccct aacaaggctc agtgtgtgaa gttcctctga 240
ttta 244

<210> 77
<211> 254
<212> DNA
<213> Homo sapien

<400> 77



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tgtagggcct atggtagggg taaaaggagg gcaatttcta gatcaaataa taagaaggta 180
atagctacta agaagaattt tatggagaaa gggatgcgtg cggggatat agggtcgaag 240
cggcactcgt aaggggtgga ttttttctat gtagctgttg gttatggtag ttaaaatgta 300
ataattatta gtagtaagcc taggaga 327

<210> 81
<211> 316
<212> DNA
<213> Homo sapiens

<400> 81
taattttgtg ggttgattcc tcaattcttt atttttgga ttttgtaatg tgtttgtgta 60
attttattta taattttatt tgtatttatg ttttttatag gtatgtatac atatgatgtg 120
tatgtttttt gtgtgtttat gtgtgtgtgt gtgtgtgtgt gtgtgtgtgt gtgtgtgtgt 180

<210> 82
<211> 111
<212> DNA
<213> Homo sapiens

<400> 82
agccattttac cacccatcca caaaaaaaaa aaaaaaaaaa aaaaaatatc acgaataaaa 60
atagacttta aaaaaaaagg aacatttgat ggcattgata gccatcacca g 111

<210> 83
<211> 224
<212> DNA
<213> Homo sapiens

<400> 83
tcgggtgatg cttcctcagg ccaagaagat aaagcttcag acccctaaca catttccaaa 60
aaggaagaaa ggagaaaaaa gggcatcatc cccgttccga agggtcaggg aggaggaaat 120
tgaggtggat tcacgagttg cggacaactc ctttgatgcc aagcgaggtg cagccggaga 180
ctggggagag cgagccaatc aggttttgaa gttcctctca gtgc 224

<210> 85
<211> 348
<212> DNA
<213> Homo sapiens

<400> 85
gcactgagag gaacttcgtt ggaaacgggt ttttttcatg taaggctaga cagaagaatt 60
ctcagtaact tcttttgtgtt gtgtgtattc gacttcacgaa gttgtaacgat cctttatata 120
gagcagacct gtaacattct twttgtggaa tttgtaaagtt aagatttcag gcgttttgaa 180
gtcaaaaggta gaaaaaggaaa tatcttttcta taaaaaatag acagaatgat tctcagaaac 240
tcctttgtca tgtgtgtgtt caaattcata gttttcacct ttwwttttat agaagtaatt 300
aggaatacct ctgttttaaa aat tggaaa tggatagagg ccttaaat 348

<210> 86
<211> 111
<212> DNA
<213> Homo sapiens

[illegible]

<210> 88
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 88
agtagttgcc 18

<210> 89
<211> 11
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 89
ttccgttatg c 11

<210> 90
<211> 10
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 90
[illegible] 10

<210> 91
<211> 1

<210> 83
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 83
tgaattgcca tgatttt 17

<210> 84
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 84
cttttcatgc aattcaa 17

<210> 85
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 85
ttttcgtcac tcatggtt 18

<210> 86

<210> 103
<211> 17
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<220>
<223> Primer for amplification from breast tumor cDNA

<400> 103
ggtcgtgacc tgcaccg 17

<210> 104
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 104
gctcctctcg cttaccaaac 20

<210> 105
<211> 20
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<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 105

<210> 107
<211> 20
<212> DNA
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<220>
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<400> 107
ggtttagtgg gaagcaatta 20

<210> 108
<211> 20
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<220>
<223> Primer for amplification from breast tumor cDNA

<400> 108
gtaatttcgc gaacgcgtag 20

<210> 109
<211> 20
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<220>
<223> Primer for amplification from breast tumor cDNA

<400> 109
atggtcgatc gataggtgga 20

<210> 110
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 110

<110> [illegible]

<120> [illegible]

<130> [illegible]

<140> [illegible]
<141> [illegible]

<160> [illegible]

<170> [illegible]

<210> 111
<211> [illegible]
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 111
[illegible] [illegible]

<210> 112
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 112
acataaacaa tttagcgttc

<210> 113
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 113
cgtgtgatgc ctcctcagga

<210> 114
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 114
agcatgttga ggcagaacag

<210> 115
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<210> 117
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 117
cattagtttc tctatcgact 20

<210> 118
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 118
agactgactc atgtccccta 20

<210> 119
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 119
tcatcgttcg gtgactaaag 20

<210> 120
<211> 2
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 122
gacgcttggc cacttgacac 20

<210> 123
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 123
gtatcgacgt agtggtctcc 20

<210> 124
<211> 20
<212> DNA
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<220>
<223> Primer for amplification from breast tumor cDNA

<400> 124
tagtgatatt acgacgttgg 20

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 127
ctggtatctc ctcttggtta tt 22

<210> 128
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 128
ctgcctgagc cacaaatg 18

<210> 129
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for amplification from breast tumor cDNA

<400> 129
ccgtcatagg aagtaagagt aata 24

<210> 130
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 130
[illegible] 14

<210> 131
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Predicted Th Motifs (B-cell epitopes)

<400> 131
Ser Ser Gly Gly Arg Thr Phe Asp Asp Phe His Arg Tyr Leu Leu Val
 1   5   10   15
Gly Ile

<210> 132
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Predicted Th Motifs (B-cell epitopes)

<221> VARIANT
<222> (1) ... (22)
<223> Xaa = Any Amino Acid

<400> 132
Gln Gly Ala Ala Gln Lys Pro Ile Asn Leu Ser Lys Xaa Ile Glu Val
 1   5   10   15
Val Gln Gly His Asp Glu
            20

<210> 133
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<223> Predicted Th Motifs (B-cell epitopes)

<400> 133
Ser Pro Gly Val Phe Leu Glu His Leu Gln Glu Ala Tyr Arg Ile Tyr
 1   5   10   15
Thr Pro Phe Asp Leu Ser Ala
            20

<210> 134
<211> [illegible]

<220>
<223> Predicted HLA A2.1 Motifs (T-cell epitopes)

<400> 134
Tyr Leu Leu Val Gly Leu Gln Gly Ala
1 5

<210> 135
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Predicted HLA A2.1 Motifs (T-cell epitopes)

<400> 135
Gly Ala Ala Gln Lys Pro Ile Asn Leu
1 5

<210> 136
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Predicted HLA A2.1 Motifs (T-cell epitopes)

<221> VARIANT
<222> (2)...(9)
<223> Xaa = Any Amino Acid

<400> 136
Asn Leu Ser Lys Xaa Ile Glu Val Val
1 5

<210> 137
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Predicted HLA A2.1 Motifs (T-cell epitopes)

<400> 137
Glu Val Val Gln Gly His Asp Glu Ser
1 5

<210> 138
<211> 9
<212> PRT
<213> Artificial Sequence

<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Predicted HLA A2.1 Matrix T-cell epitopes

<400> 140
Phe Val Ala Pro Ala Ala Phe Asp Ser
1 5

<210> 141
<211> 9388
<212> DNA
<213> Homo sapien

<400> 141
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ctgtgtctat gtagaaagaa gtagacataa gagatttcat tttgttctgt agtaagaaaa 120
attcttctgc ctgagatgc tgttaaatctg taaccctagc ccaaaccctg tgctcacaga 180
gacatgtgct gtgttgactg aaggttcaat ggatttaggg ctatgctttg ttaaaaaagt 240
gcttgaagat aatatgcttg ttaaaagtca tcatcattct gtaatctcaa gtacccaggg 300
acacaatata ctgcggaagg ccgcagggac ctctgtctag gaaagccagg tattgtccaa 360
gatttctcag tatgtgatag ctgagagatat ggcttcatgt gaaggtaaag agctgactgt 420
ccccagccct gacatctccc agccccacat ccccagccct gacactgaaa aagggtctgt 480
gctgaggagg attagtaaaa gaggaaggcc tcttttgcagt tgaggtaaga ggaaggcatc 540
tgtctctgtc tcttcctctg gcaaataaat gtcttttgtgt aaaatccgat tgtatgtttt 600
acttactgat attgagagaa atatcttcta ggcttaagct gagacaagct gtggcaatta 660
ctgtctttta atgcaccgag atttttgtat aaattaatat tatgcatatt tacttttctt 720
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atttaccctt tgtggtgcca ccaccccctt ctgtgaggtg ttgtgcaagt ttgtgtgtat 840
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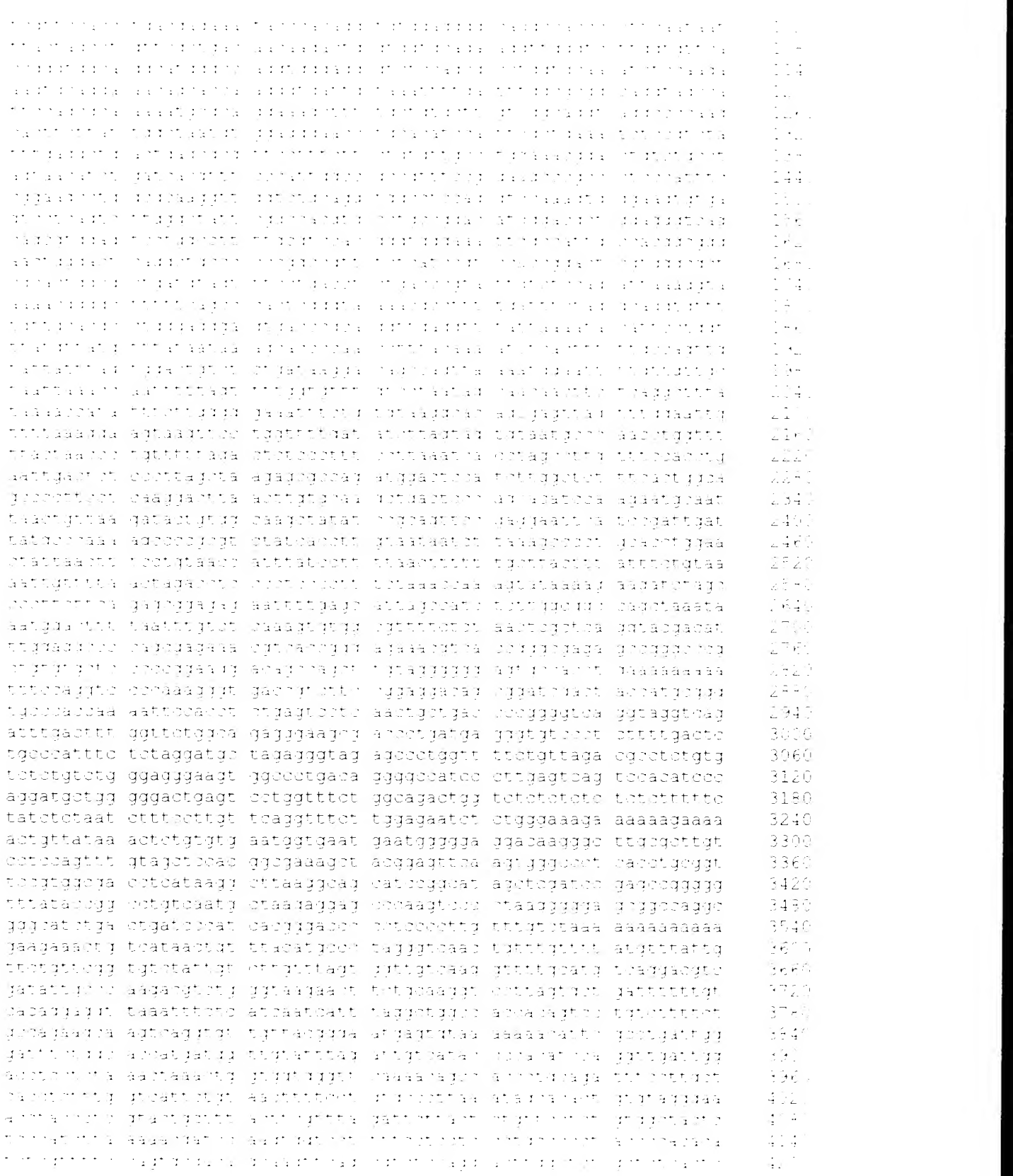
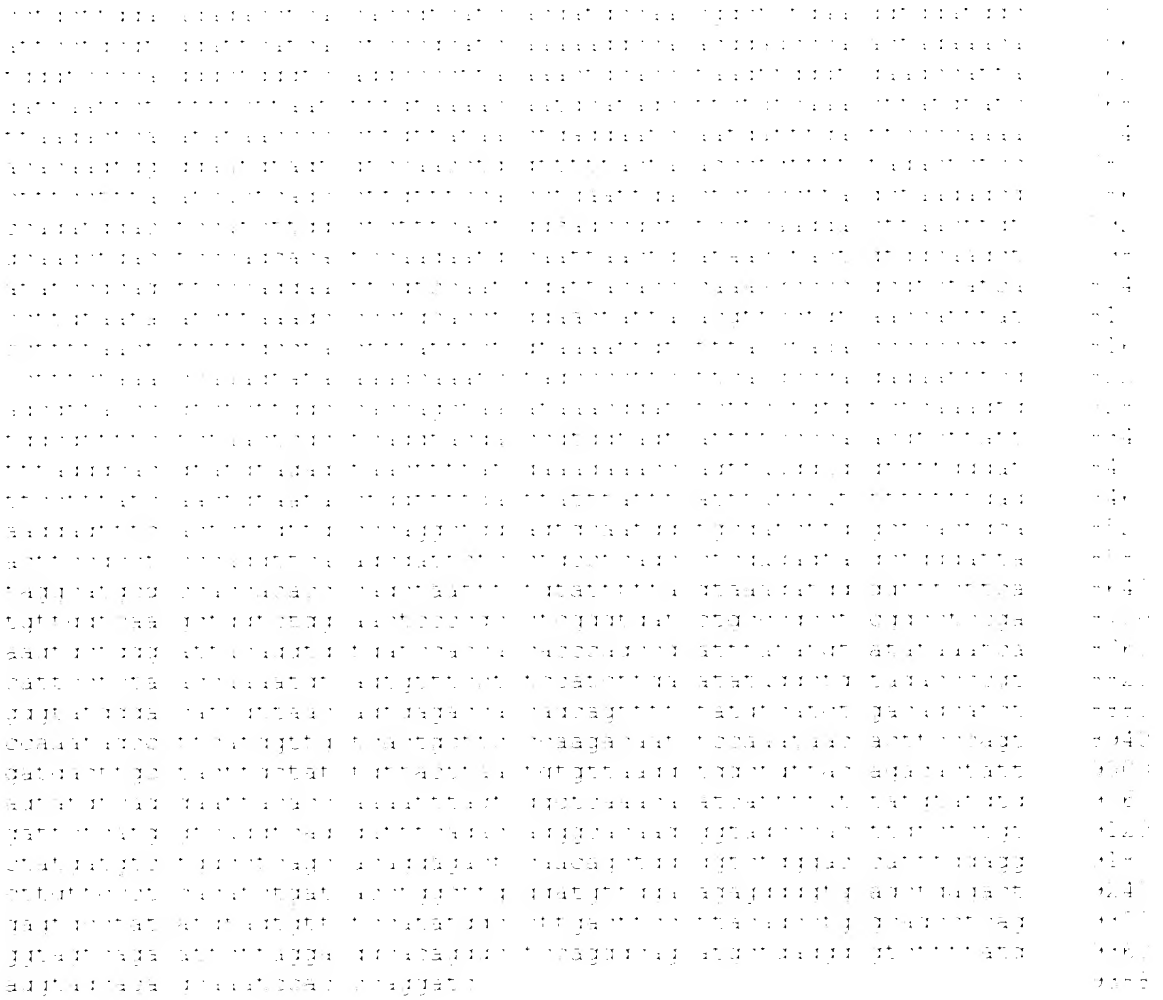
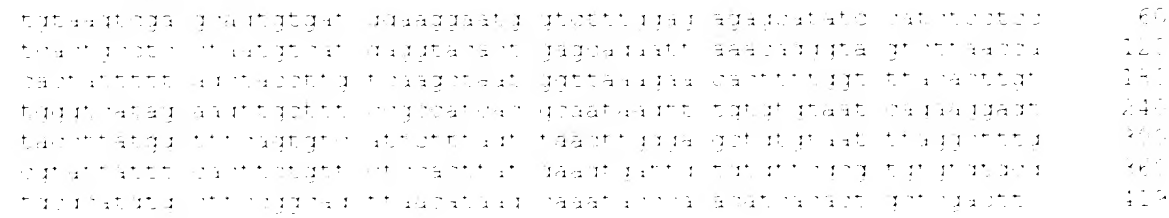




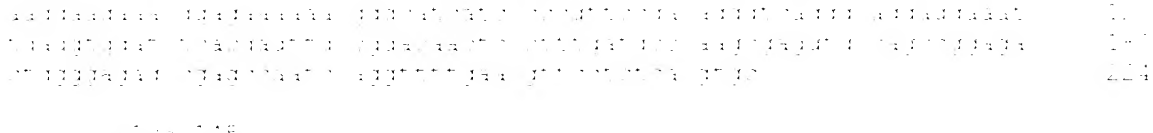
<210> 142
<211> 419
<212> DNA
<213> Homo sapien.

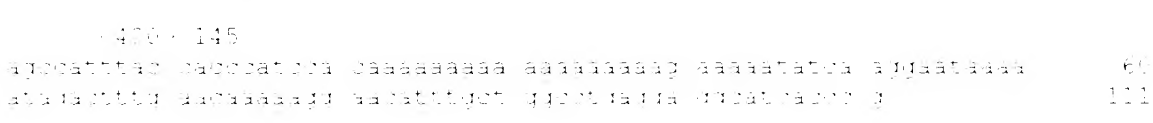
<400> 142

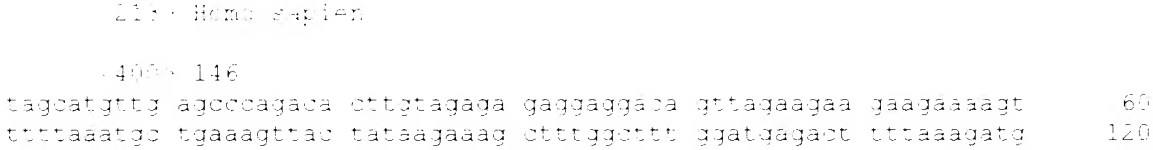


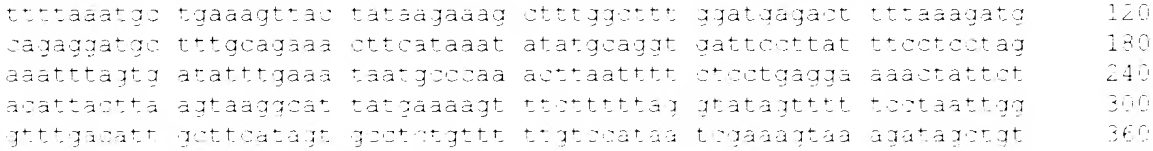
<210> 143
<211> 419
<212> DNA
<213> Homo sapien.

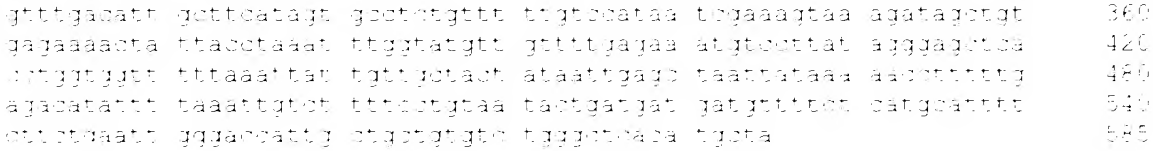
<400> 143

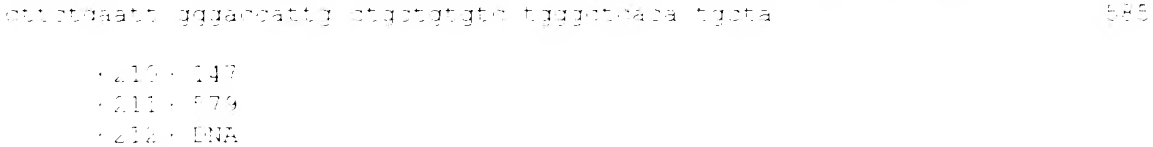












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<211> 332
<212> DNA
<213> Homo sapiens

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gtctgtaagg ttgatttttg ttatgaaatt tatgcctgga atgcattgct tgcctgacca 180
tggtccaaat cttagtgaac aattaaaatt ttctgtgttc tggttctcca aagttctttt 240
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tagaggttca g 311

<210> 153
<211> 332
<212> DNA
<213> Homo sapiens

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gttgatatct ggctgtcctt tttataatgc agagtgggaa ctttccctac catgtttgat 180
aaatgttgtc caggctccat tgccaataat gtgttgtcca aaatgcctgt ttagttttta 240
aagacggaac tccatccttt gcttggtctt aagtatgtat ggaatgttat gataggacat 300
agtagtagcg gtggttcagc tatggaatct tg 332

<210> 154
<211> 345
<212> DNA
<213> Homo sapiens

<220>
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<223> n = A,T,C or G

<400> 154

<211> 156
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<220>
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<223> n = A,T,C or G

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aggtgggctt gggctgagtg ggtgggggaa gtgtgtgtgc aaaggggtg tnaatgtnta 180
tgcgtgtgag catgagtgat ggctagtgtg actgcatgtc agggagtgtg aacaagcgtg 240
cgggggtgtg tgtgcaagtg cgtatgcata tgagaatatg tgtctgtgga tgagtgcatt 300
tgaaagtctg tgtgtgtgcg tgtggtcatg anggtaantt antgactgcg caggatgtgt 360
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<210> 157
<211> 206
<212> DNA
<213> Homo sapien

<220>
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<223> n = A,T,C or G

<400> 157

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<211> 547
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<220>
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<222> (1)...(547)
<223> n = A,T,C or G

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[illegible] 240
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[illegible] 360
[illegible] 420
[illegible] 480
[illegible] 540
[illegible] 547

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<211> 203
<212> DNA
<213> Homo sapien

<400> 159
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ctcatgggtc tctctgctcc agttctaaac ctttctcttt tcctagaaca tgcatttacg 180
tcgatagaag ttcctctcag tgc 203

<210> 160
<211> 402
<212> DNA
<213> Homo sapien

<400> 160
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taaacaataa taataatatt tagcatttat agagcacttt atatctttaa agtacttgca 120
aacattaygt aattaaatac cctctctgat tataatctgg atacaaatgc acttaaactc 180
aggacagggt catgagacaa gtatgcattt caaagttggt gctagctatg ctttaaaaac 240
ctatacaatg atgggcaagt tagagttcag attctgttgg actgtttttg tgcatttcag 300
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[illegible] ca 402

<210> 161
<211> [illegible]
<212> DNA
<213> Homo sapien

<211> 167
<212> DNA
<213> Homo sapien

<220>
<221> misc feature
<222> (1)...(500)
<223> n = A,T,C or G

<400> 167
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agaggagaca cctgctaggt gtaaggagaa gatggttagg tctacggagg ctccagggtg 120
ggagtagttc cctgctaagg gagggtagac tgttcaacct gttcctgctc cggcctccac 180
tatagcagat gcgagcagga gtaggagaga gggaggtaag agtcagaagc ttatgttgtt 240
tatgcgggga aacgccttat cgggggcagc cragttatta ggggacantr tagwyarttw 300
agntagcatc caaagcangg gagtttntcc c atatggttgg accgcaggc ggcgcattta 360
gtgattagca tgtgagcccc agacacgcat agcaataagg acttaaactc agatnctgtg 420
ctgattactt aacatgaatt attgtattta tttaacaact ttgagttatg aggcatattt 480
ttaggtccat attanctgga 500

<210> 168
<211> 368
<212> DNA
<213> Homo sapien

<400> 168

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<210> 169
<211> 1[illegible]
<212> DNA
<213> H[illegible]

<400> 169
[illegible]
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<210> 170
<211> 383
<212> DNA
<213> Homo sapien

<400> 170
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taattgatcc agagaacatg ctggctacaa ctaataaaac cgaaaaaagt gaattttcaa 180
attttttcta caacccattgt atgcatgttc tcacagcacc actttttgacc aatacttcag 240
aagacaaatg tgaaaaggat aatatagttg gatcaaacaa aaacaacaca atttgtcccg 300
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<210> 171
<211> 999
<212> DNA
<213> Homo sapien

<400> 171
[illegible]

[illegible]

<210> 172
<211> [illegible]
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<220>
<221> misc_feature
<222> [illegible]
<223> n = A,T,C or G

<400> 172
[illegible]

<210> 173
<211> 701
<212> DNA
<213> Homo sapien

<400> 173
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cattagcagt ggaagaagaa atgttgatat tttatgtcag ctattttata atcaccagag 180
tgcttagctt catgtaagcc atctcgtatt cattagaaat aagaacaatt ttattcgtcg 240
gaaagaactt ttcaatttat agcatcttaa ttgctcagga ttttaaattt tgataaagaa 300
agctccactt tttggcaggag taggggcag ggagagagga ggctccatcc acaaggacag 360
agacaccagg gccagtaggg tagctggtgg ctggatcagt cacaaggga tgacttatgc 420
catgagaaga aacaacctcc aaatcttagt tgcttaatac aacacaagct catttcttgc 480
tcacgttaca tgtcctatgt agatcaacag caggtgactc agggacccag gctccatctc 540
catatgagct tccatagtca ccaggacacg ggctctgaaa gtgtcctcca tgcagggaca 600
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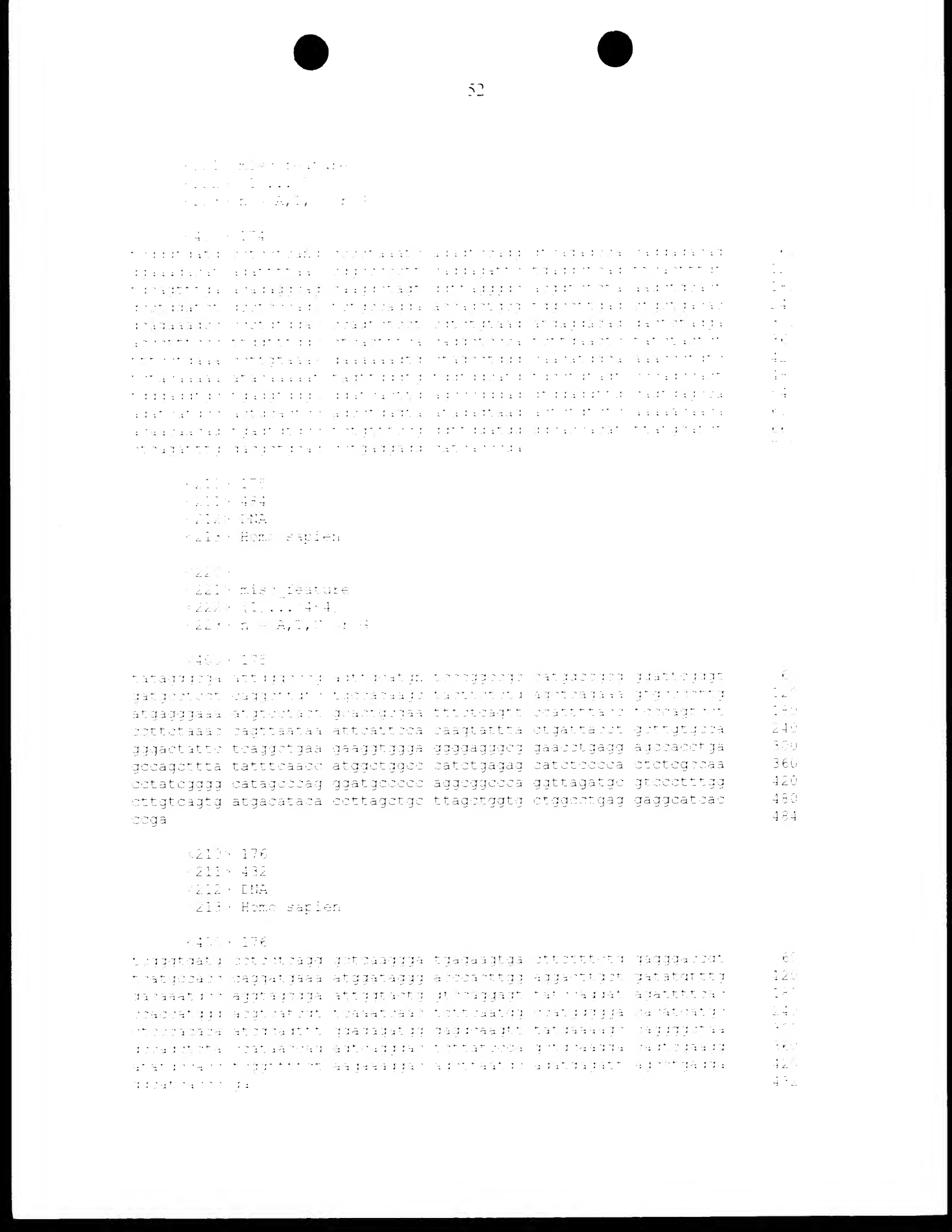
<210> 174
<211> [illegible]
<212> DNA
<213> Homo sapien

<400> 174



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<212> DNA
<213> Homo sapien

<400> 1

<210> 178
<211> 786
<212> DNA
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attgttgttt ttttgttttc tttaaaggtt taatcagaca gatcagacag catattcttg 180
tatttaattg catacacctt ggtatattta ttcatgaata agctttgtat ttgaagtaag 240
agcctatcaa agggacttgt tataaatgaa agttctggct gtagaggtta gtatttgtga 300
gtttcagagc agccagtgat tgttccagtc agtgatgcct agtttatatag aggaggaata 360
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tacacacttt atatatatgt atgtatgtat gaaaacatga aattagtttg tcaaatatgt 480
gtgtgttag tattttagct tagtgcaact atttccacat tatttattaa attgatctaa 540
gacactttct tgttgacacc ttgaatatta atgttcaagg gtgcaatgtg tattcctta 600
gattgttaaa gcttaatttac tatgatttgt agtaaattaa cttttaaaat gtatttgagc 660
cctctgtag tgtcgtaggg ctcttacagg gtgggaaaga ttttaatttt ccagttgcta 720
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<212> DNA
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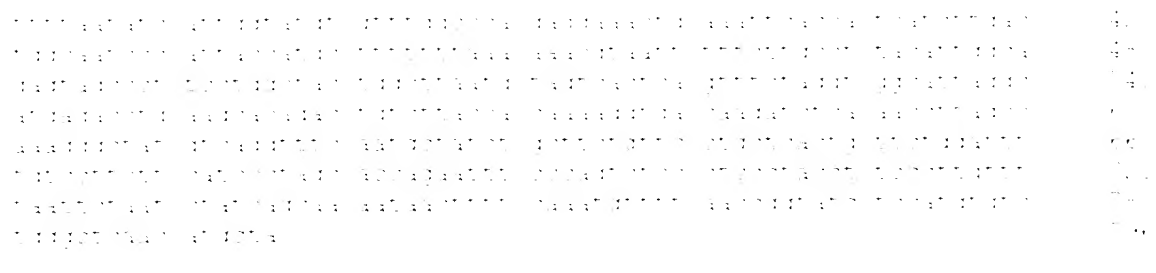
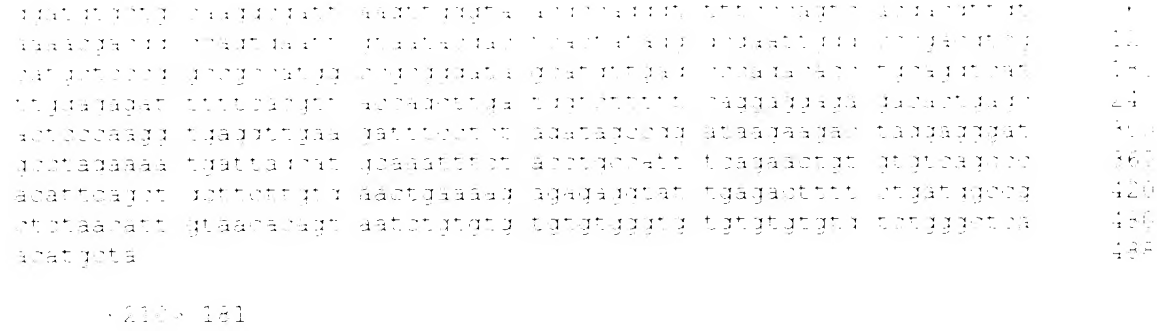
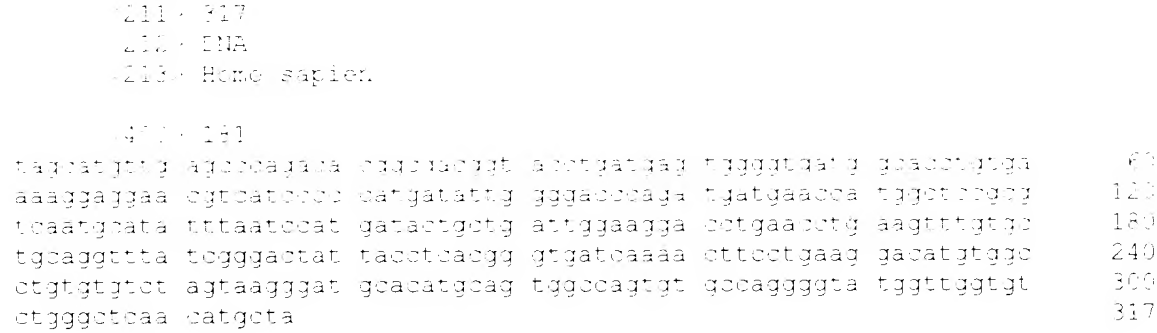
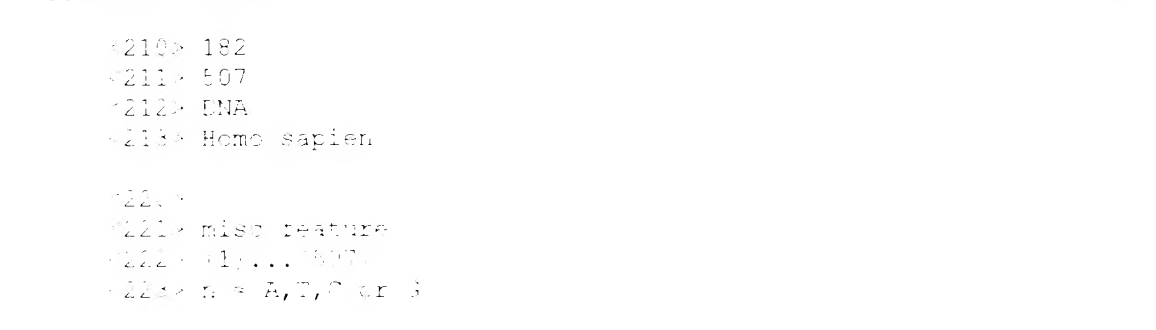
<400> 179









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<212> DNA
<213> Homo sapiens

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ttttataaaa cctgacaaaa ctatcaatca agcataaaga cagatgaaga aattttcaag 180
attttggcca atcagatatt ttatttcaag agtattgcag cgtaa 225

<210> 195
<211> 597
<212> DNA
<213> Homo sapiens

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tgaaagaaaa ggagtgaggt gatagagctg agagatcaga tttgcctctg aagcctgttc 180
aagatgtatg tgctcagacc ccaccactgg ggcctgtggg tgaggtcctg ggcatctatt 240
tgaatgaatt gctgaagggg agcactatgc caaggaaggg gaacccatcc tggcactggc 300
acaggggtca ccttatccag tgctcagtgc ttctttgctg ctacctggtt ttctctcata 360
tgtgaggtgc aggtaagaat aagtgcccrg tgttgtgtga gttttagaac atctaccagt 420
aagtgggtaa gtttcacaaa gcagcagctt tgttttgtgt attttcacct tcagttagaa 480
gaggaaggct gtgagatgaa tgttagttga gtgggaaaga cgggtaagct taatggatag 540
agacctaac gaatcactag tgcggccgcc ttgcaggtcg accatatggg agagctc 597

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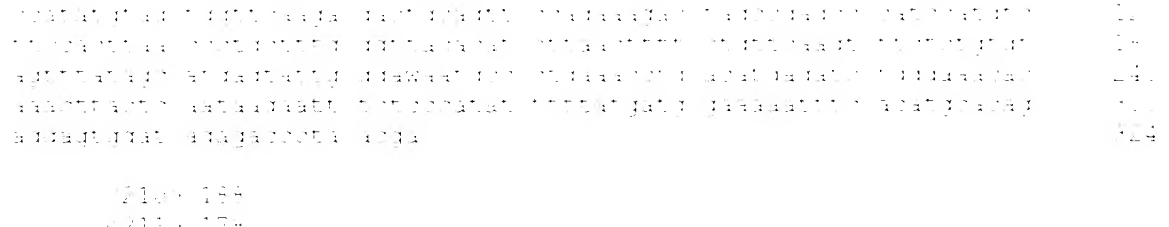
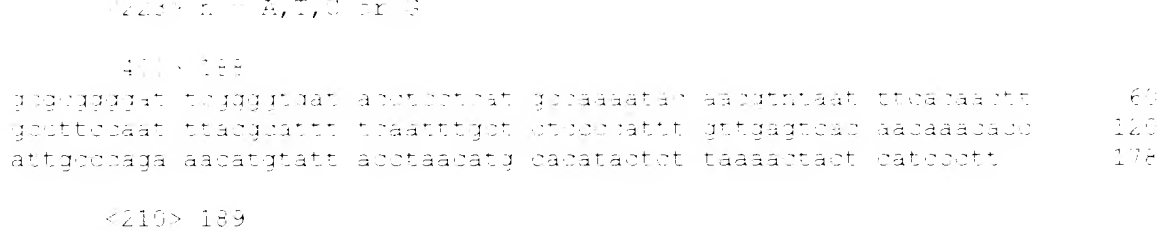
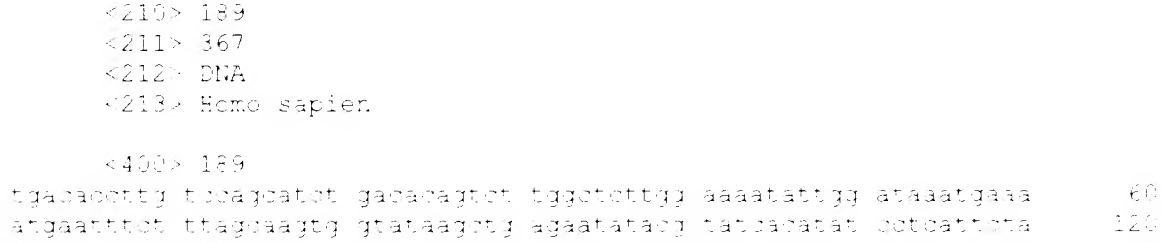
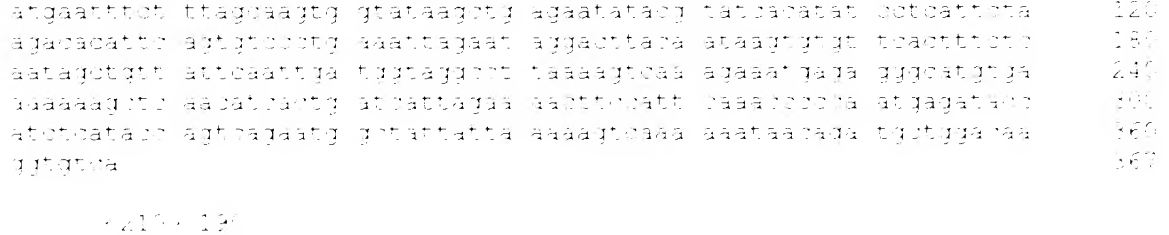
<212> DNA
<213> Homo sapiens

<400> 196









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[illegible]

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<212> DNA
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tctacaaaga acttatacaa atttacaaga aacaaacaaa caatcaactc ctcaaaaagt 180
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caaggtgtc 369

<210> 192
<211> 449
<212> DNA
<213> Homo sapien

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tttaaaatca tgtttcatca gtttgaaatg atttgggctg ctaatcaaca caattggatc 180
gactgttcta ctaaacaaca ggaaaatgtg tatctggcag cctgtggaga aacactaaac 240
attgattttt ctttgccttt tacggacttt gttccagcta catgtaatac caagttctct 300
ttaagaggag aagatgttga tcttcatttg tttctaccag actgccaccc tagtaaatat 360
tctttattta tgctggtaaa aaattgccat ccaaataaga tgattcatga tactggtatt 420
cctgctgagt gtcaagtggc caagagtca 449

<210> 193
<211> 372
<212> DNA
<213> Homo sapien

<400> 193
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[illegible]

<210> 194
<211> [illegible]
<212> DNA
<213> Homo sapien

<220>
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<222> (1)...([illegible])
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<400> 194
[illegible]

<210> 195
<211> 312
<212> DNA
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<220>
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<222> (1)...(312)
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ctttcagata aggtcacaaa catgaatggc tccgacaacc ggagtcagtc cgtgctgagt 240
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ggccaagcgt ca 312

<210> 196
<211> 258
<212> DNA
<213> Homo sapien

<400> 196
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[illegible] 120
[illegible] 180
[illegible] 240
[illegible] 258

<210> 197
<211> [illegible]
<212> DNA

<211> [illegible]
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<213> [illegible]

<400> 1
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<211> [illegible]
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<213> [illegible]

<400> 2
[illegible]

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<211> 1042
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<213> Homo sapien

<220>
<221> misc feature
<222> (1)...(1042)
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ttcaataata ggggggaatgg gcccngaagt tgcaaggttc cngcccgcca tgnccgcggg 180
atttagtgac attacgacgs tggtaataaa gtgggscaaa waaatatttg tgatgtgatt 240
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gataaaagrt tagaagtytt tctgcacgtt aacagcatca ttaaatggag tggcatcacc 360
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gtgaaaaggca tatcctcttg tctatactga ataccacaag tacccttttg acatgtccga 540
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ttgatttttc aaccaaggtg aactgttttg cctttaaataa wmtcatcttcc tgatacmcga 780
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ttaatcc 1042

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<211> n
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<211> H
<212> DNA
<213> Homo sapiens

<400>

<211>
<212> DNA
<213> Homo sapiens

<400>

<210> 202
<211> 349
<212> DNA
<213> Homo sapiens

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<223> n = A,T,C or G

<400> 202


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tgcgggatcc cgatgagcgt cactgggtac agaccagatt cagccggaag agaaagcgcc     180
gcagggagag actcgaactc cactccgttg gtgagcagcc ccatgttttc aactcgaagt     240
tcaaacggca ttgggttata taccatcagc tgaacttcac acacatctcc ttgaacccac     300
tggaaatcta tttcttgttt ccgctcttct ccacagtgtt gcagcgtaa                 349
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<210> 203
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<212> DNA
<213> Homo sapiens

<400> 203


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cagtttttaa cgcaatatag tatagtttat ctgattcttt tgattttcag gacatttaaa     120
acaaatgtta ttactcacac tagcctatgg atttatgcat ctgtcagagc tagaaatttt     180
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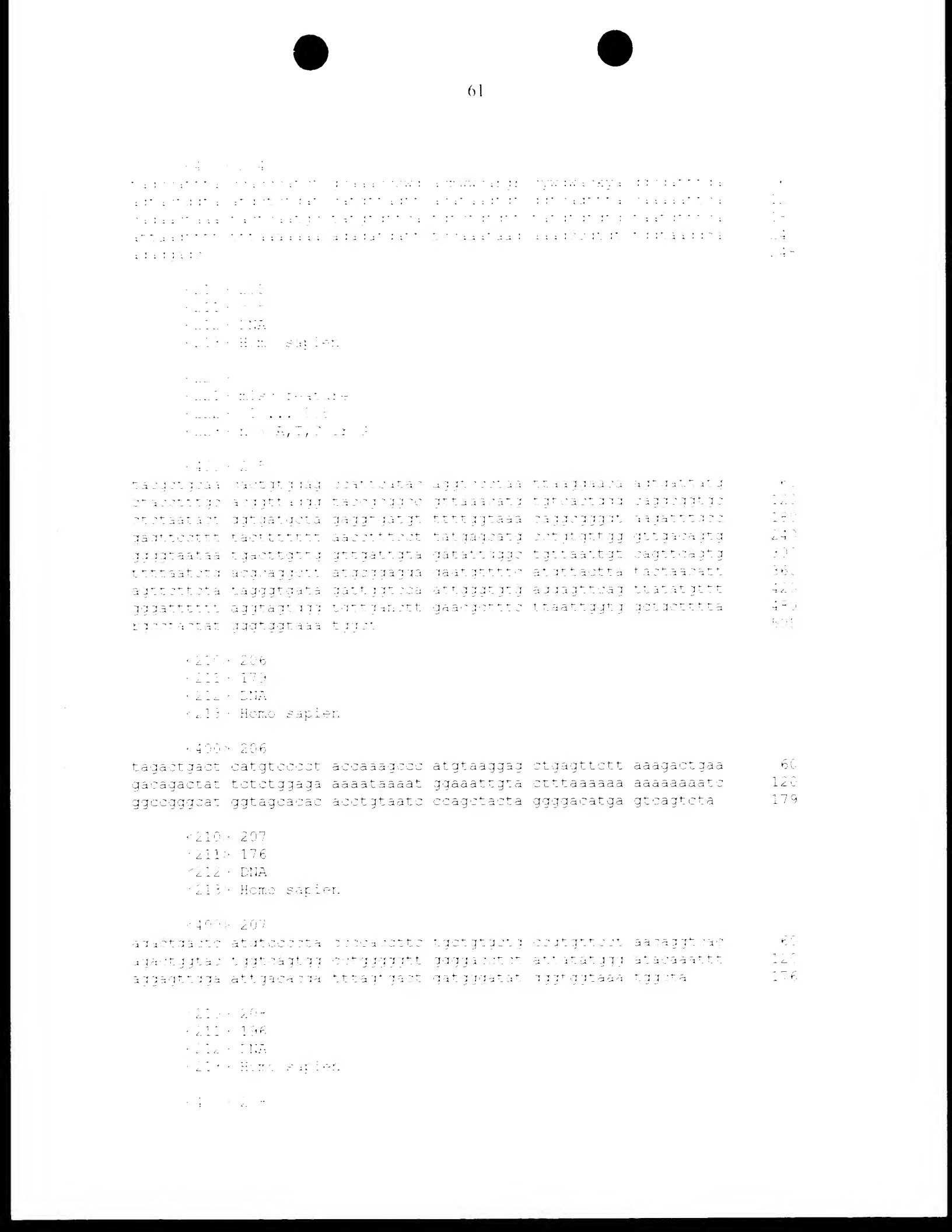
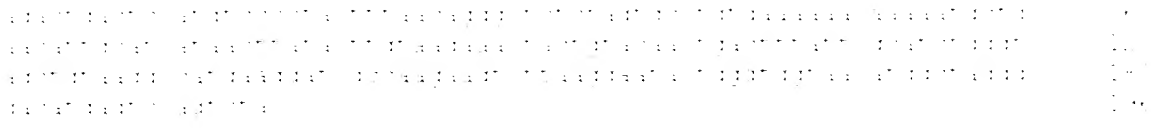
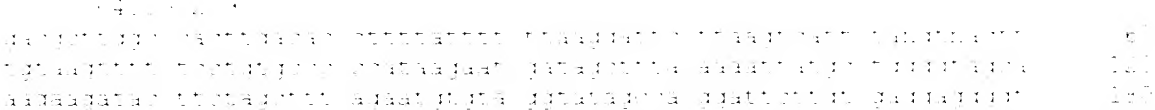
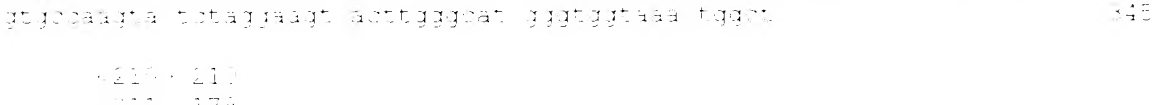
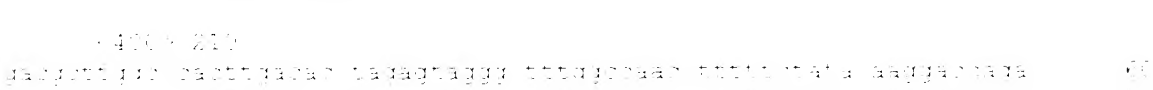
<212> DNA
<213> Homo sapiens

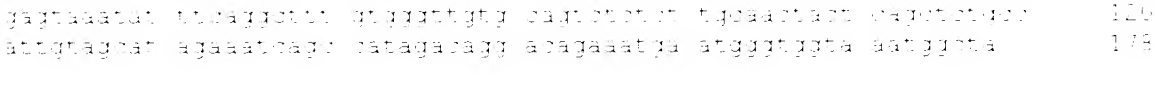


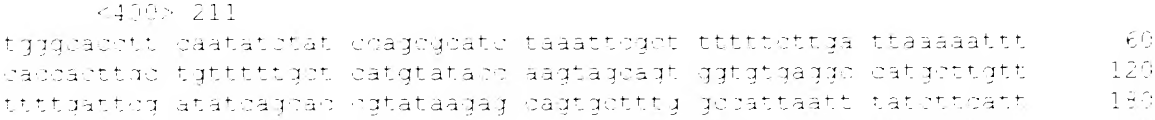


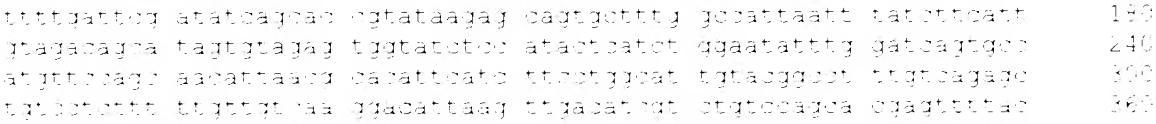


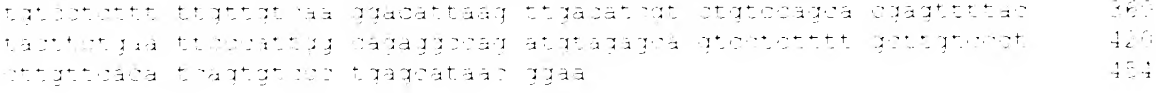












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<223> n = A,T,C or G

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ctggcttgac aagcttggaa ttagtattac atggtaaata catgtaaaat gtttagaatg   300
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<211> 178
<212> DNA
<213> Homo sapien

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attgtagcat agaaatcagc tatagacagg acagaaatga atgggtggta aatggcta     178

<210> 211
<211> 454
<212> DNA
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ttttgattcg atatcagcac cgtataagag cagtgctttg gccattaatt tatcttcatt   180
gtagacagca tagtgtagag tggtatctcc atactcatct ggaatatttg gatcagtgcc   240
atgtttcagc aacattaacg cacattcatc tttctggcat tgtacgggct ttgtcagagc   300
tgtcctcttt ttgtttgtaa ggacattaag ttgacatcgt ctgtccagca cgagttttac   360
tacttctgaa ttcccatttg cagaggccag atgtagagca gtcctctttt gcttgtccct   420
cttgttcaca tcagtgtccc tgagcataac ggaa                               454

<210> 212
<211> 337
<212> DNA
<213> Homo sapien

<400> 212
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<211> 213
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aaaaaaagtat atattagtac tatttaaact ggcttttgaa catttttatt cttttatttg 240
atgtcggtta gctgaaatga attcaatttg gaatgcagat ngagaaaaga aggagagtat 300
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atatgatgaa atacattaag atattagaaa gtgttttttg ttttgtactg ctaatttagg 420
aagtactttg tatagttgct cttcttaaaat tgaagtagat tttaaaaatc catgtaattt 480
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ttttgtaatt tcttttagtt atctgtatag tttatataaa gtcaaaatgt attttagtcg 600
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<211> 345
<212> DNA
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catttgtttc ttaaaatatg gaagtgaaag tgccacctga ggcnggggcac agtgcctcac 300
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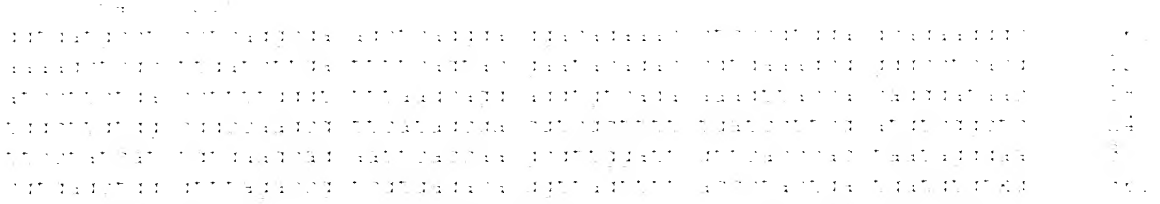

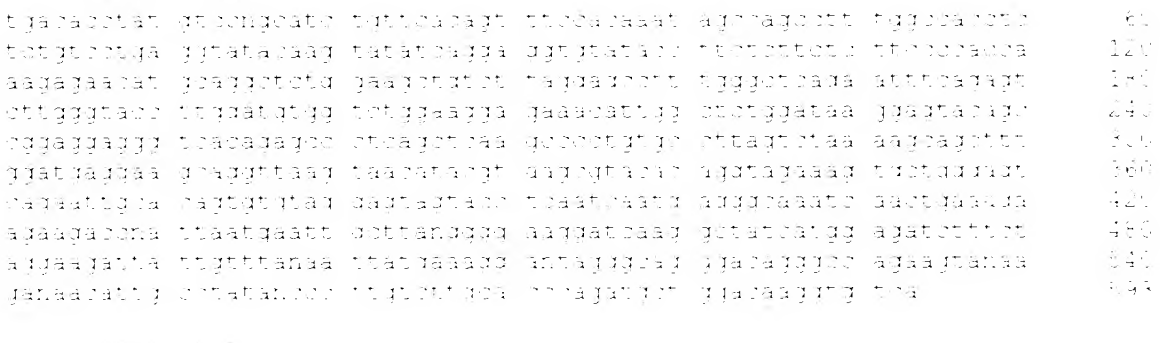

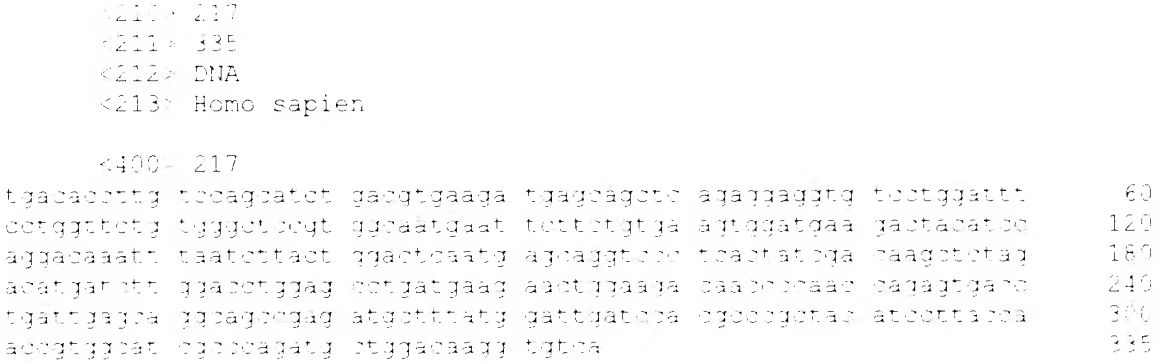

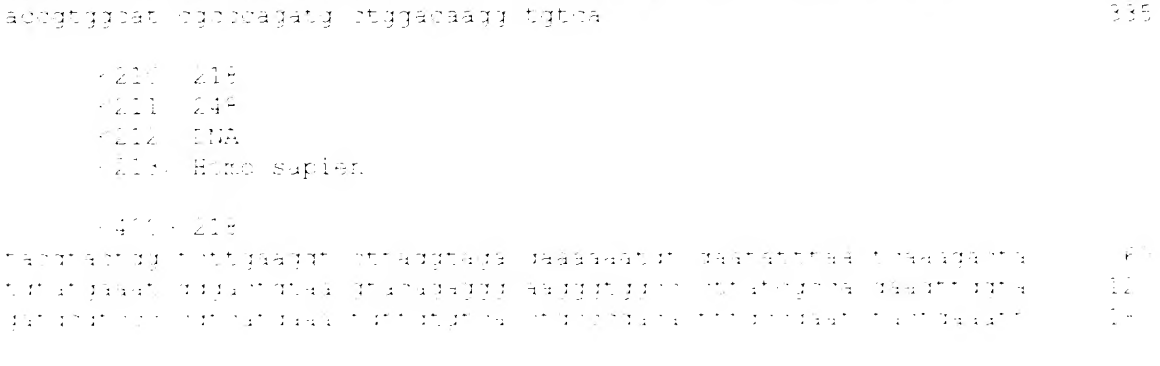

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ctgtcttttt gctggaaaag gagggaagag gaatggctga ttttacctca atgtcttcca 180
gttttcata ttcttcttgg atcctcttct ctgacaactg ttccctttg gtcttcttct 240
tcttgctcag agagcaggtc tctttaaaac tgagaaggga gaatgagcaa atgattaaag 300
aaaacacact tctgaggccc agagatcaaa tattaggtaa atactaaacc gcttgcctgc 360
tgtggtcact tttctcctct ttcacatgct ctatccctct atccccccacc tattcatatg 420
gcttttatct gccaagttat cgggcctctc atcaaccttc tccctagcc tactgggga 480
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<211> 223
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<400> 223
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<210> 224
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<212> DNA
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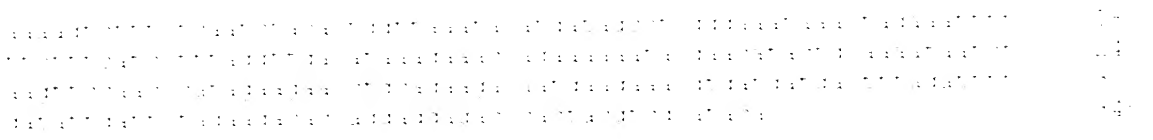
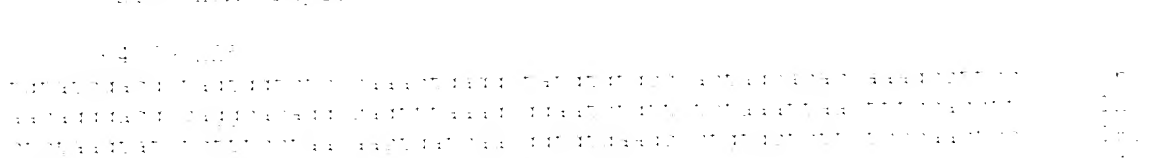
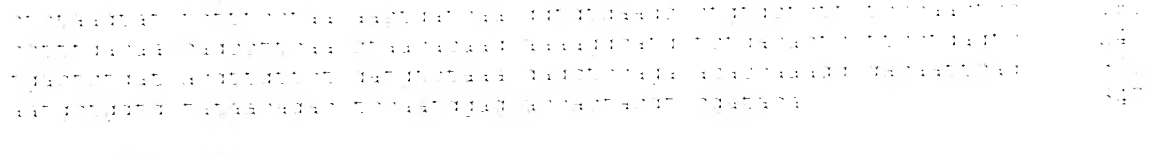
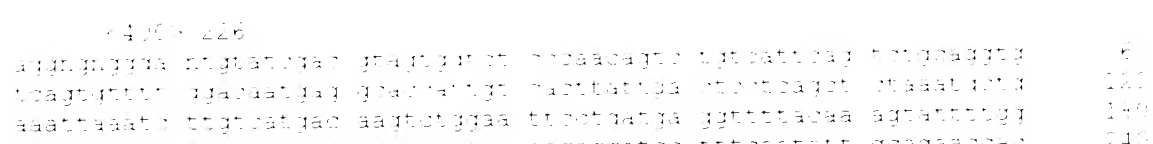
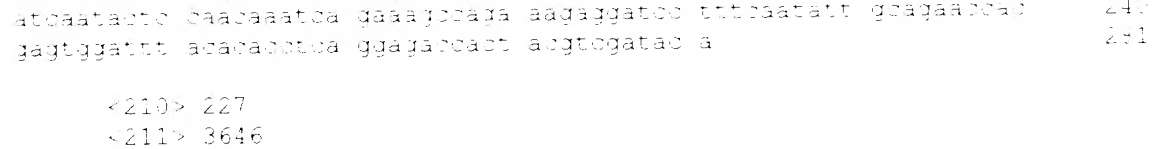
<400> 224

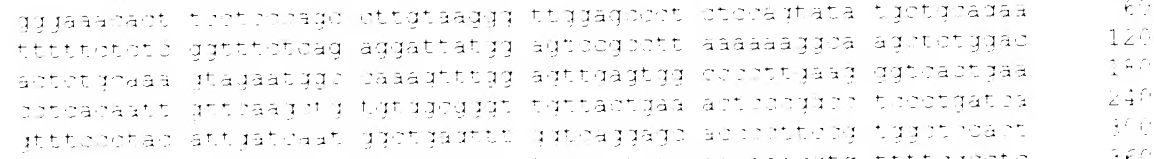


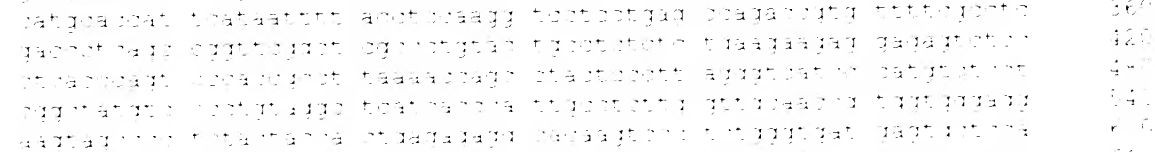


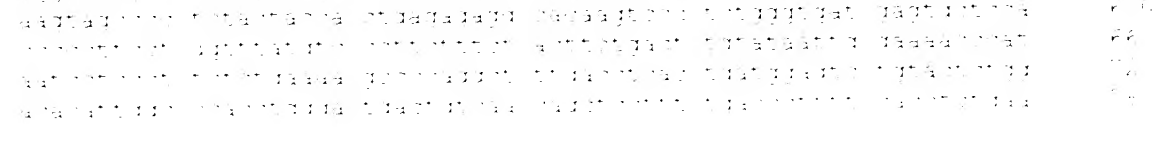


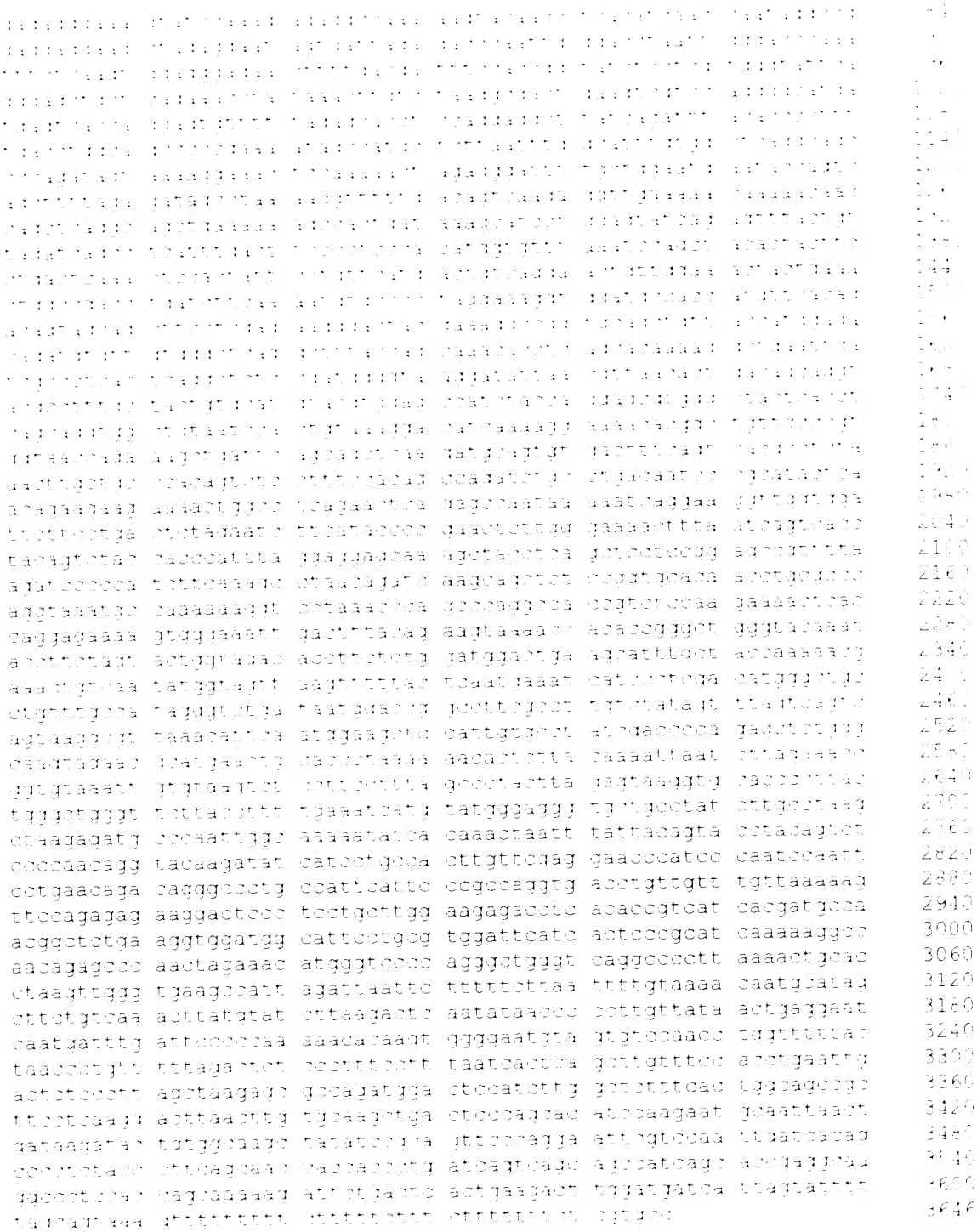


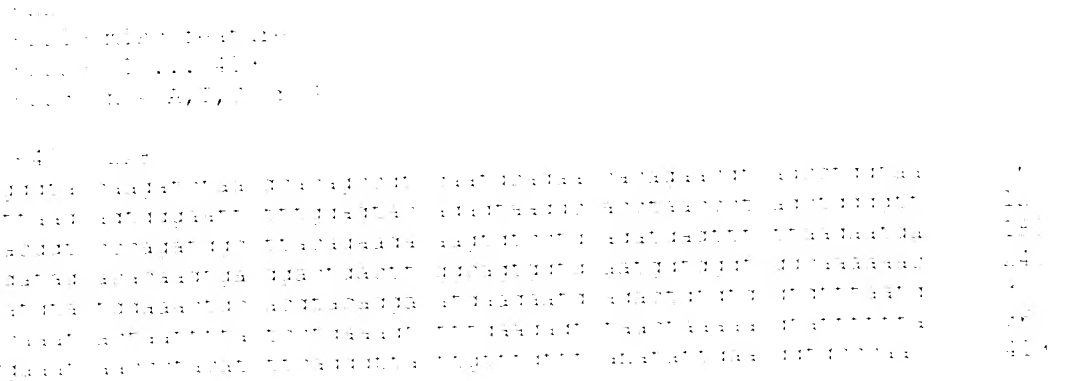


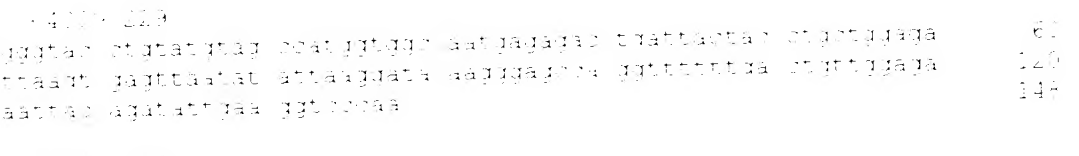


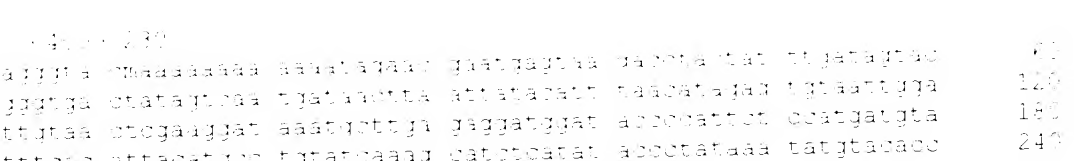


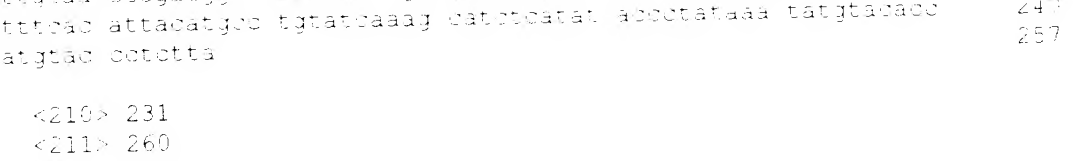


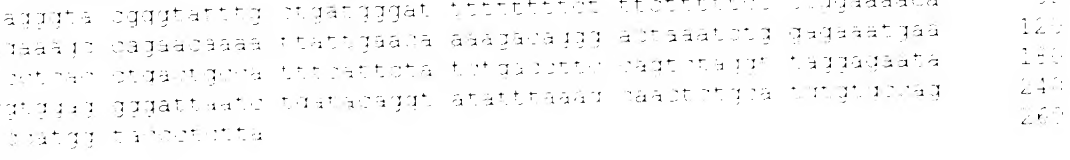












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ttgaaaagac aacaaagagt ttagagtagt acataaattt agaatagtac ataaacttag 180
aatagtacat aaacttagta cataaataat gcacgaagca ggggcagggc ttgagagaat 240
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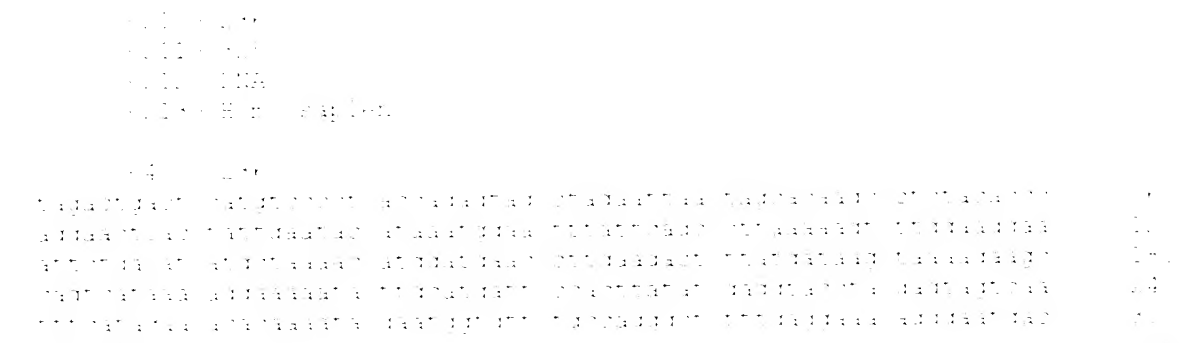

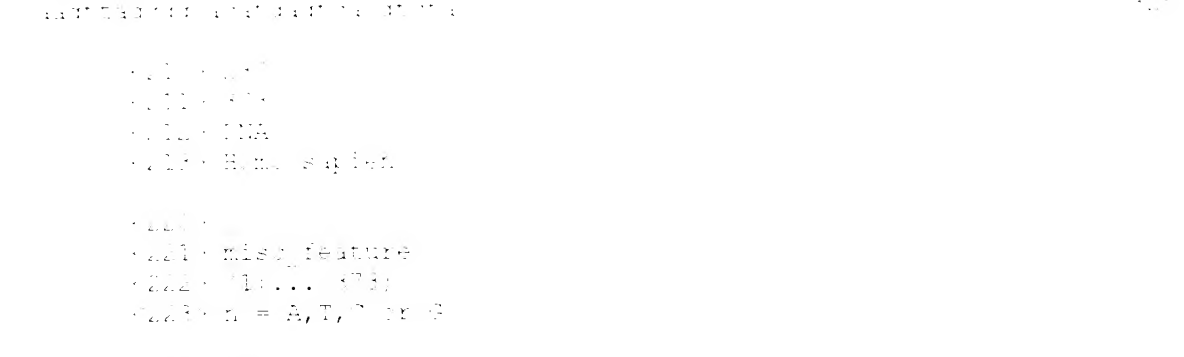

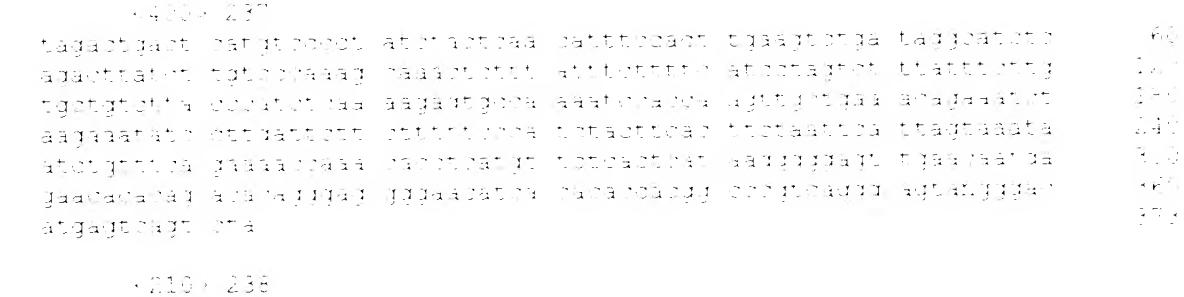

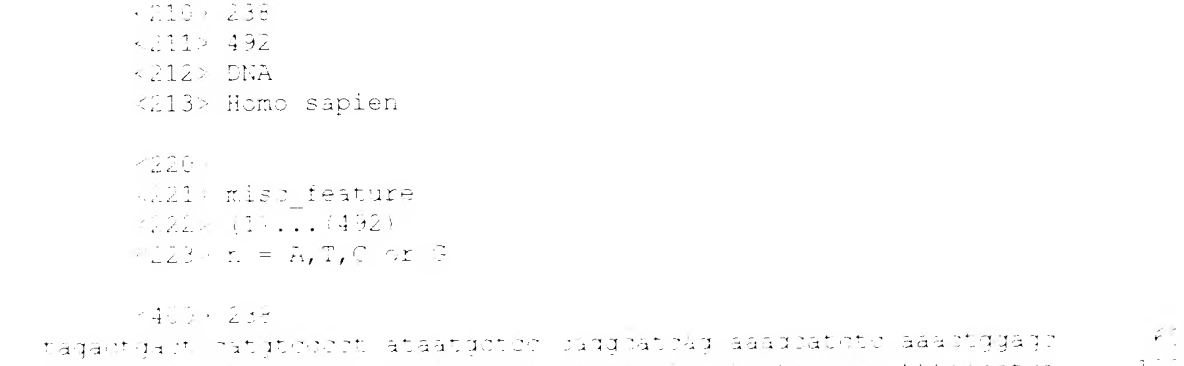

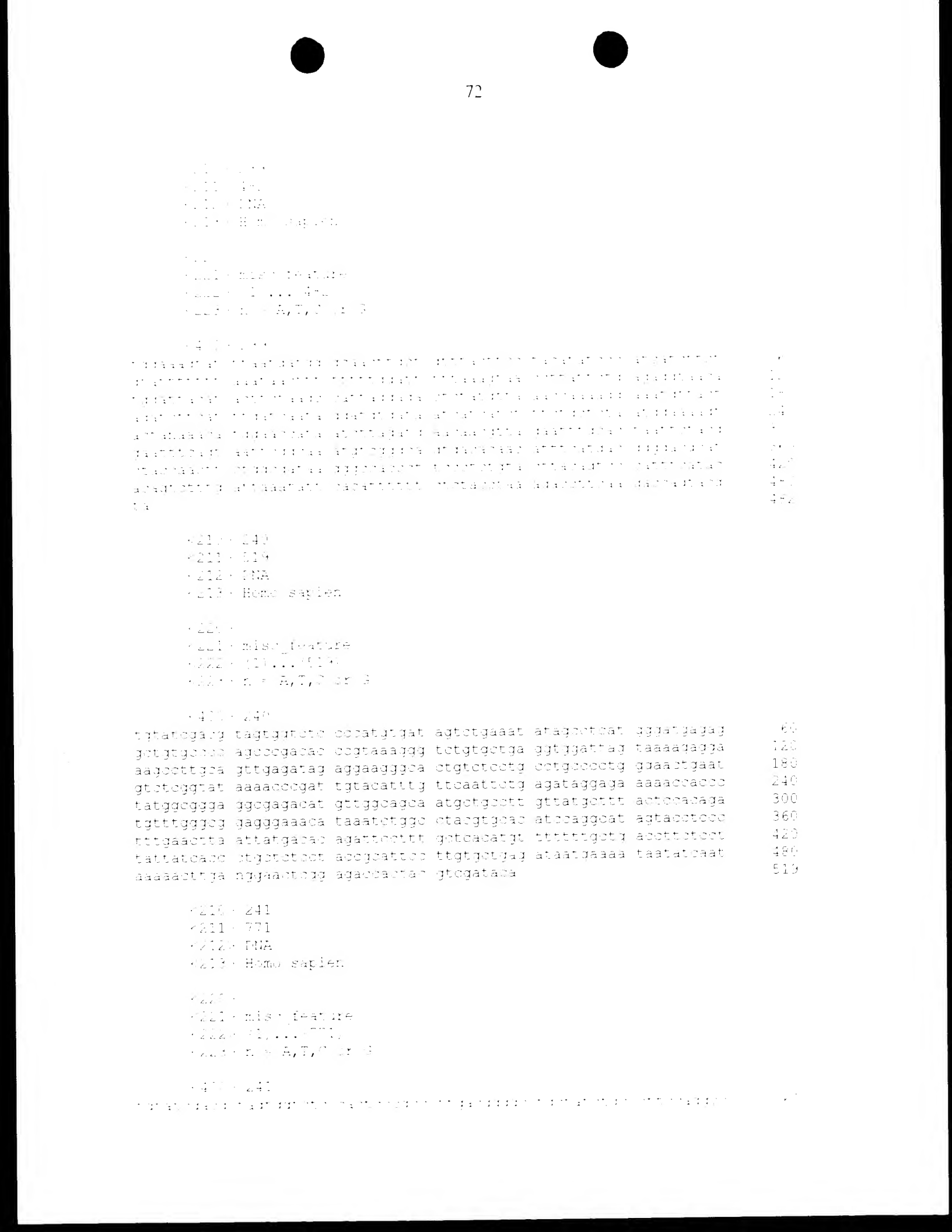

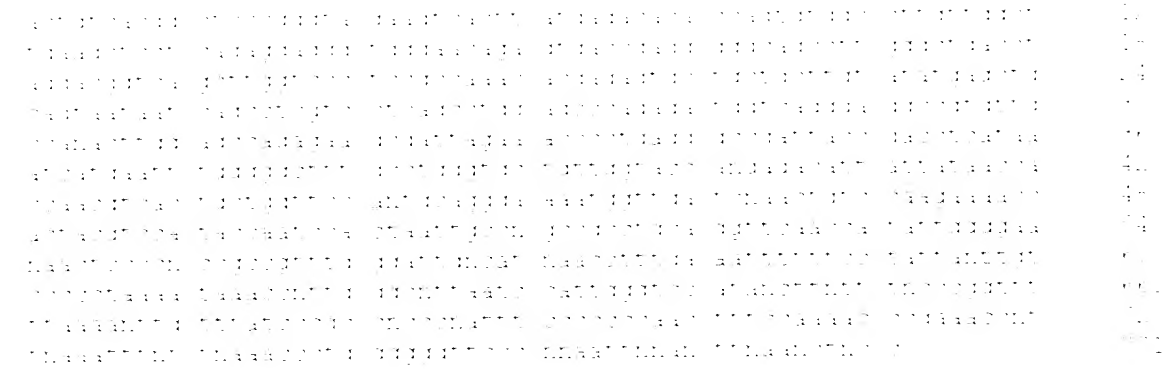

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<210> 242
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<212> DNA
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<211> 346
<212> DNA
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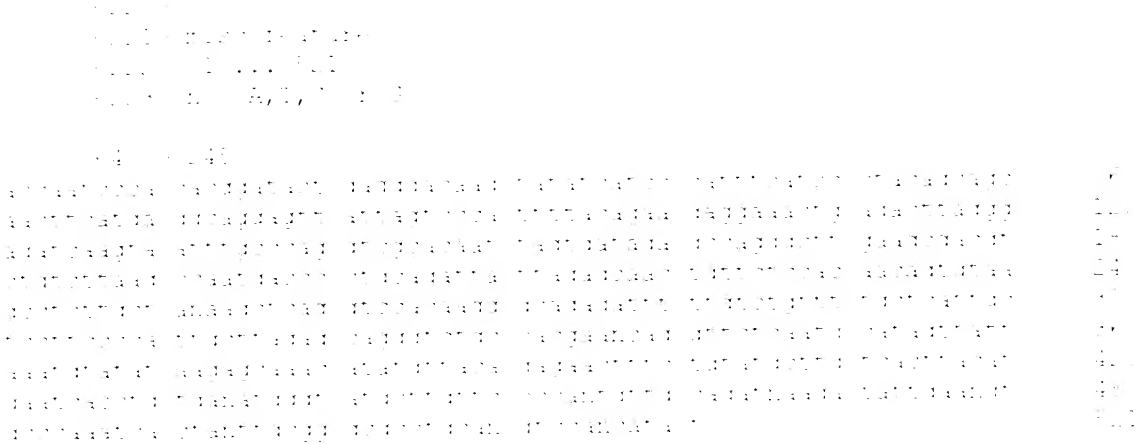
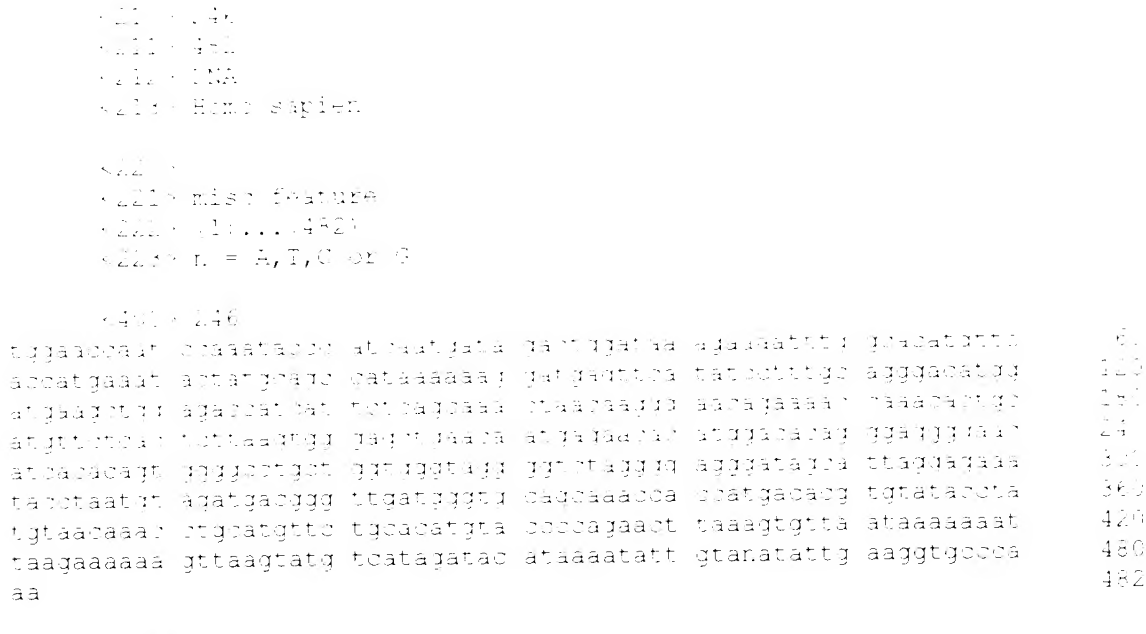
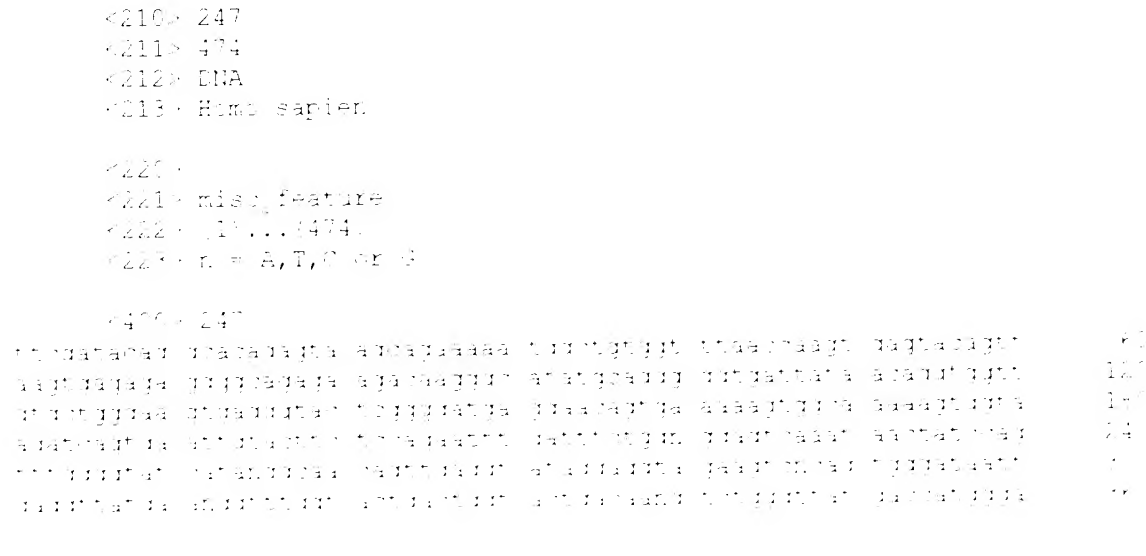
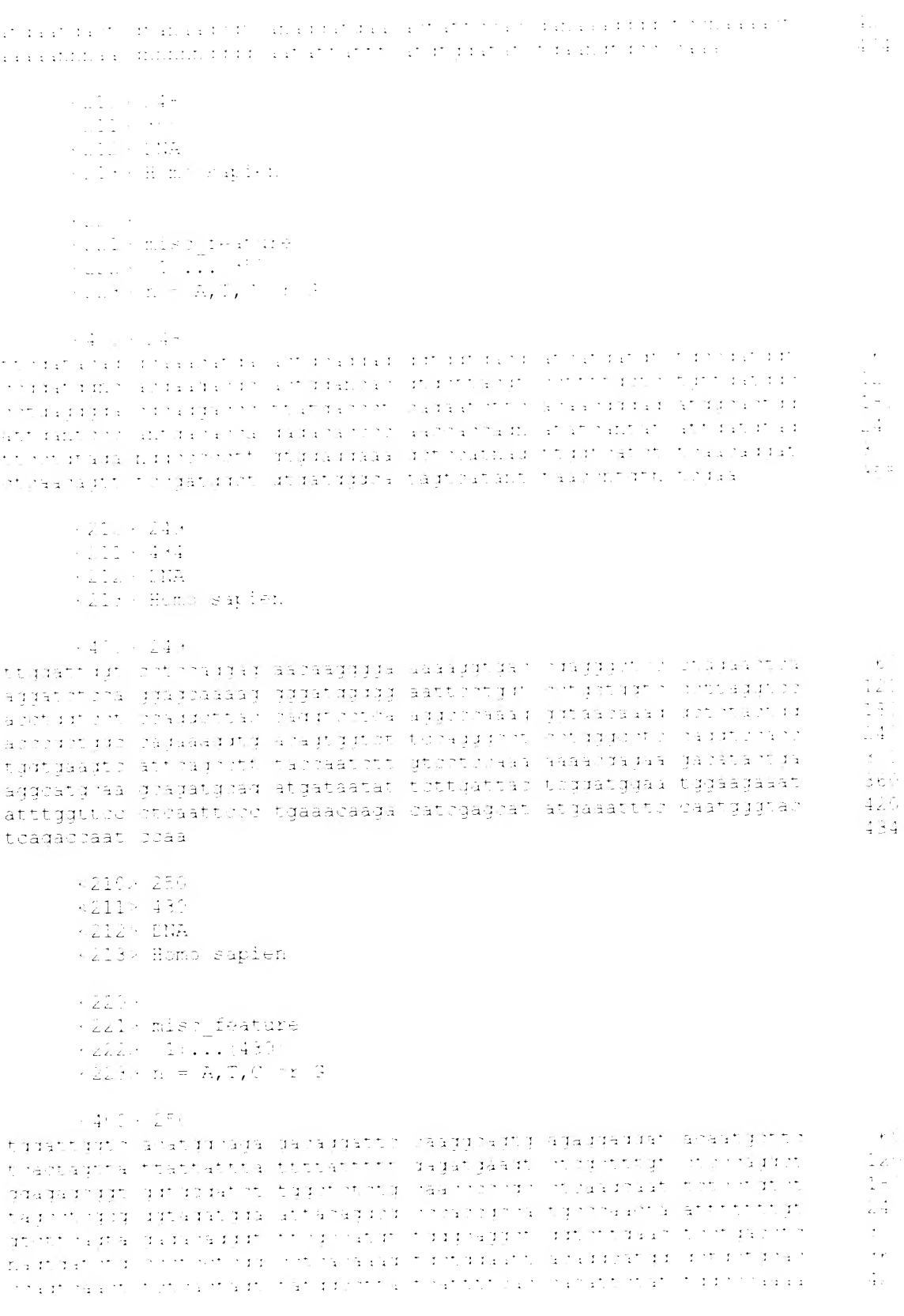








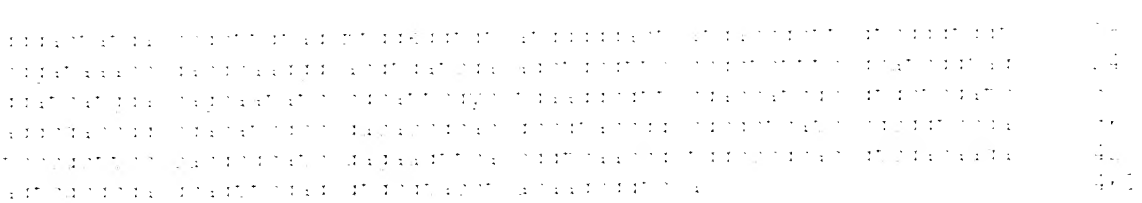
<211> DNA
<213> Homo sapiens

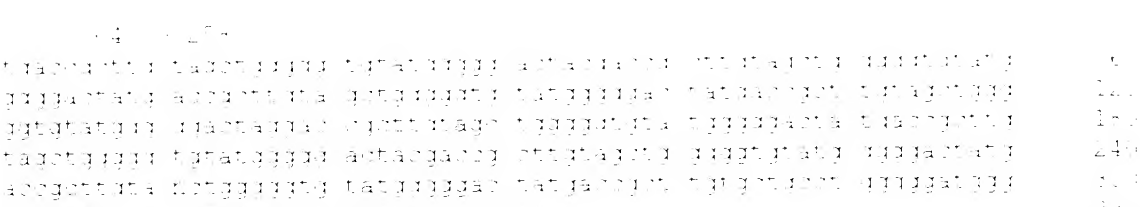
<220>
<221> misc_feature
<222> (1)...(462)
<223> n = A,T,C or G

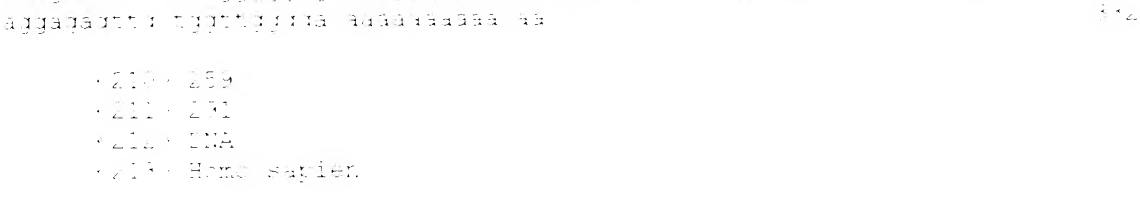
<400> 256
ttggattggt caacctgctc aactctacyt ttcctctttc ttcctaaaaa attaatgaat 60
ccaatacatt aatgccaaaa cccttgggtt ttatcaatat ttctgttaaa aagtattatc 120
cagaactgga cataatartn cataataata cataacaacc cctttcatct gatgcaaaca 180
tctatttaata tagcttaaga tnacttttan tttacagaag caacatcctg ttgatgttat 240
ttttatgttt ggaccaatcc aa 262

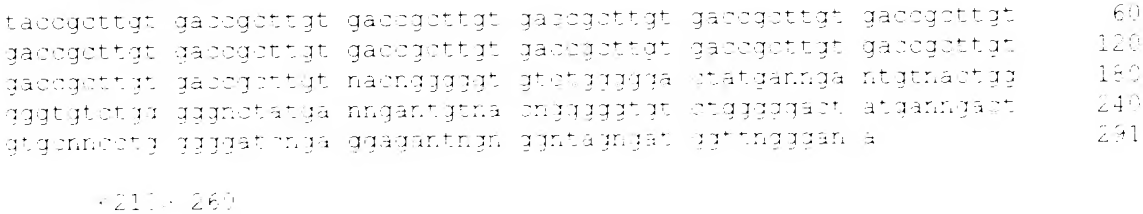
<210> 257
<211> 461
<212> DNA
<213> Homo sapien

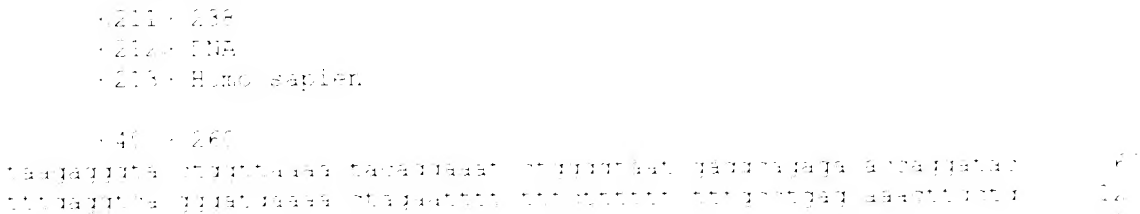
<220>
<221> misc_feature
<222> (1)...(461)
<223> n = A,T,C or G

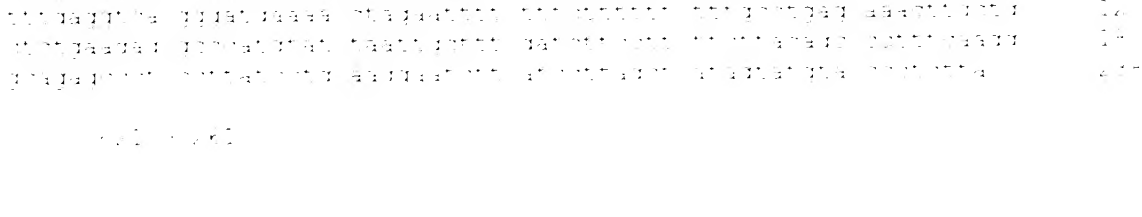


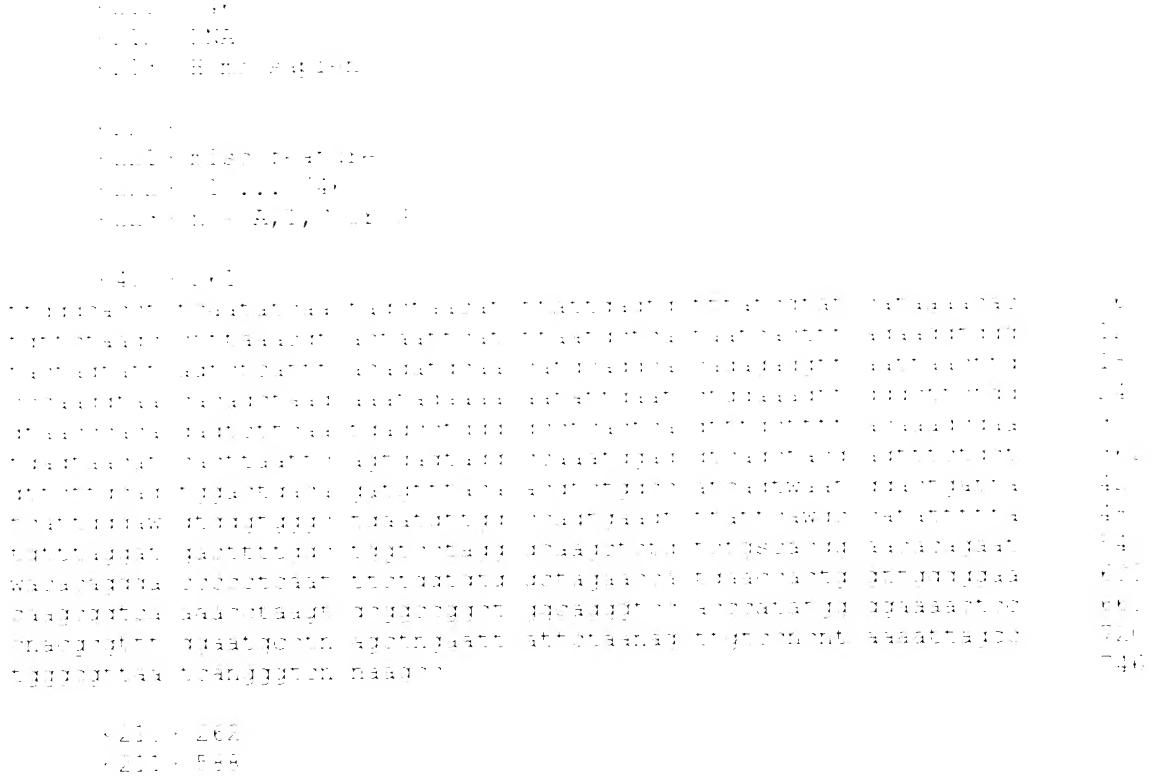












<400> 262
tgaccgcttg tcatctcaca tggggtcctg cacgcttttg cctttgtagg aaacctgaca 60
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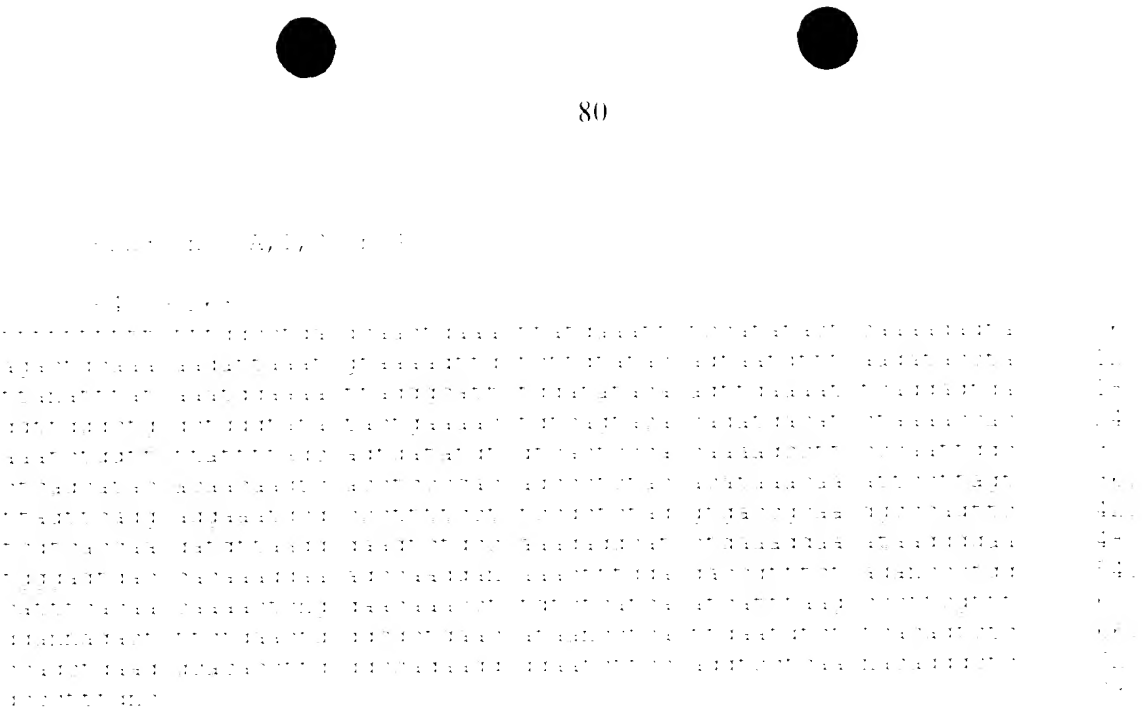
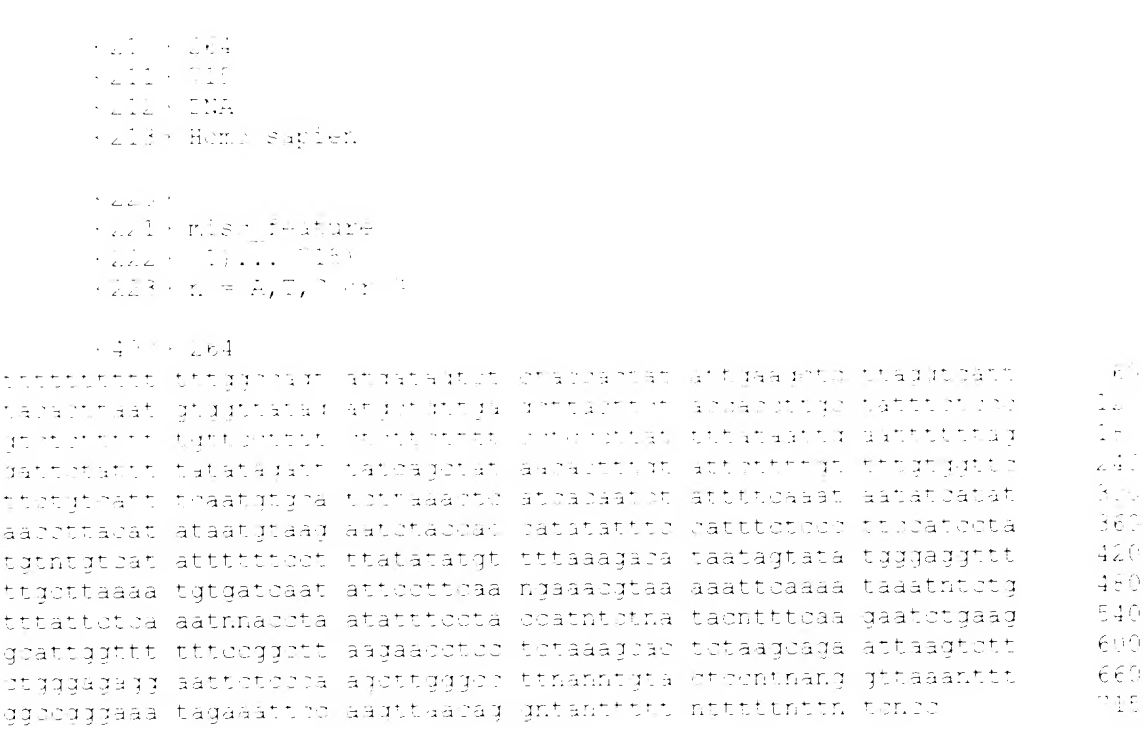
ttgctgagga ggcaggaget agagactgct gtgagctcat aggggtggga agttttatcct 180
tcaaagtccg cccactcatc actgcttcta acctttccct gaccaggctt acaaatgggt 240
tcttgcctgt tttcccttg gacccaacaa gcccctgtaa tgagtgtgca tgactctgac 300
agctgtggac tcaggggtcct tggctacagc tgccatgtaa aatatctcat ccagttcttg 360
cnaaattgtt aaatgaccac actttctaga ttccagtatc taaaatcatgt ctttatgaac 420
tgctcctcac accagagagt ggcacaataa ttctgtgggg attattactt tttttttttt 480
ntcttttttt ggnngnnnnn gnnngnccag naattacnac nttgaaaaac ctggcnnnaa 540
tttattatan agggagccct attttttttc ctaaacacaa gcgtttna 588

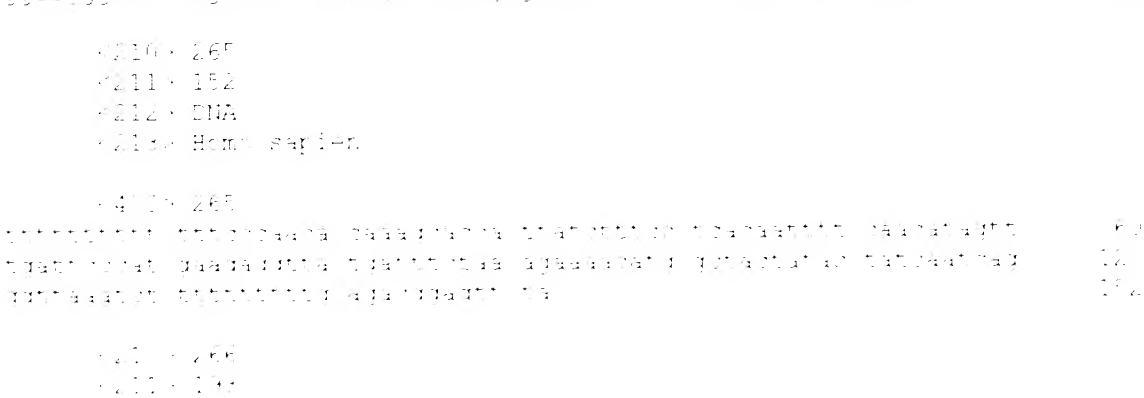
<210> 263
<211> 588
<212> DNA
<213> Homo sapiens

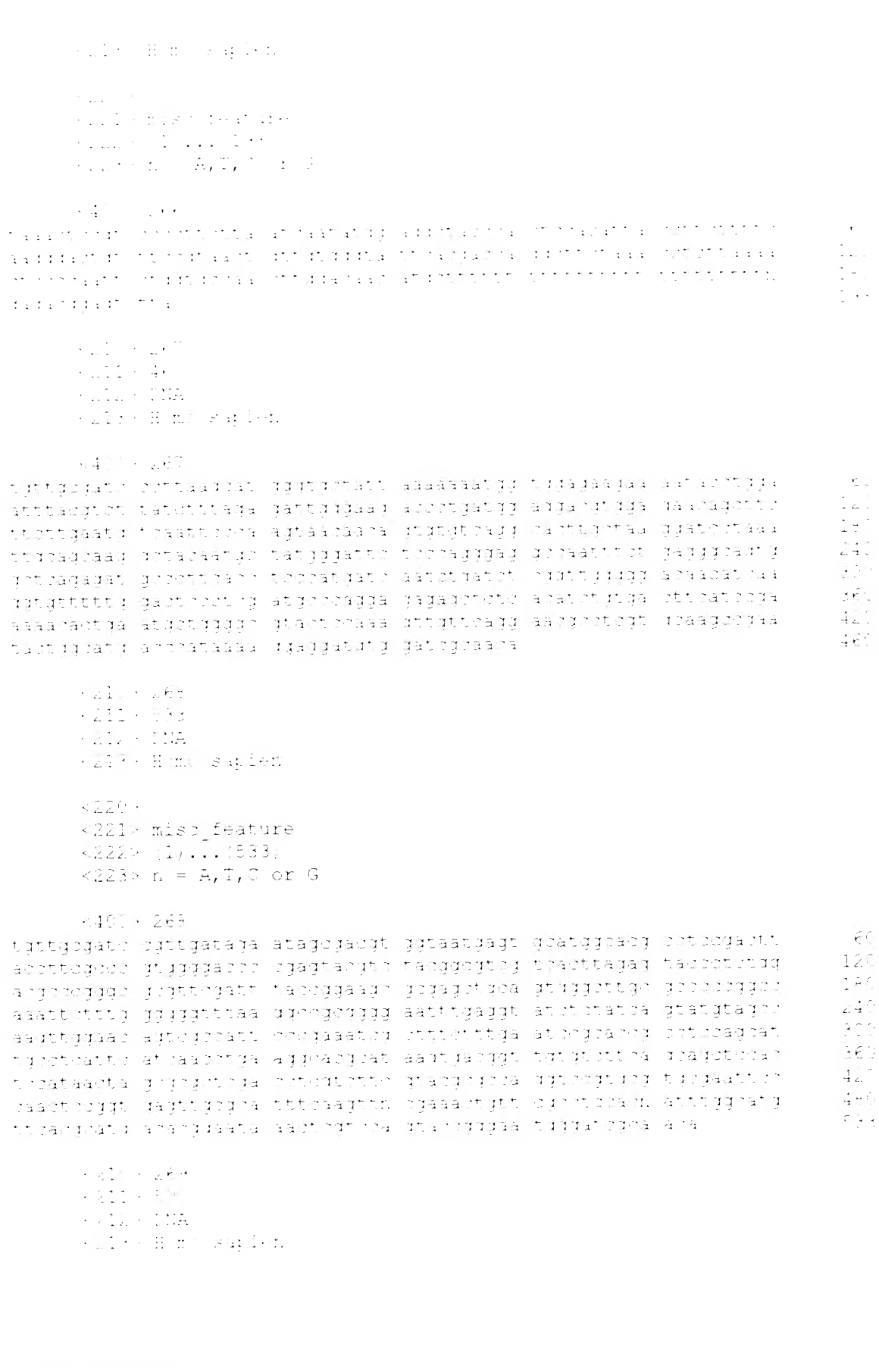
<220>
<221> misc_feature
<222> (1)...(588)
<223> n = A,T,C or G

<400> 263
tgaccgcttg tcatctcaca tggggtcctg cacgcttttg cctttgtagg aaacctgaca 60
tttgtctgtt tcttctttct cttttccttc ccatatccta ctaatttacg tttgacttgt 120
ttgctgagga ggcaggaget agagactgct gtgagctcat aggggtggga agttttatcct 180
tcaaagtccg cccactcatc actgcttcta acctttccct gaccaggctt acaaatgggt 240
tcttgcctgt tttcccttg gacccaacaa gcccctgtaa tgagtgtgca tgactctgac 300
agctgtggac tcaggggtcct tggctacagc tgccatgtaa aatatctcat ccagttcttg 360
cnaaattgtt aaatgaccac actttctaga ttccagtatc taaaatcatgt ctttatgaac 420
tgctcctcac accagagagt ggcacaataa ttctgtgggg attattactt tttttttttt 480
ntcttttttt ggnngnnnnn gnnngnccag naattacnac nttgaaaaac ctggcnnnaa 540
tttattatan agggagccct attttttttc ctaaacacaa gcgtttna 588



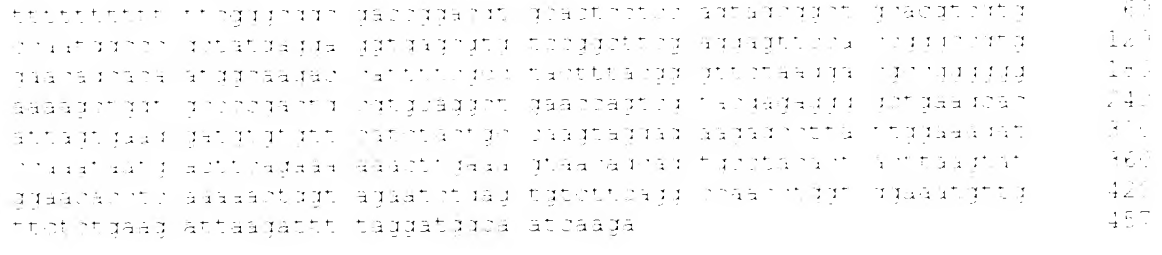






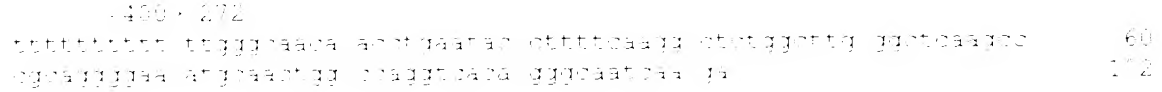
<210> 271
<211> 1
<212> DNA
<213> Homo sapiens

<400> 271



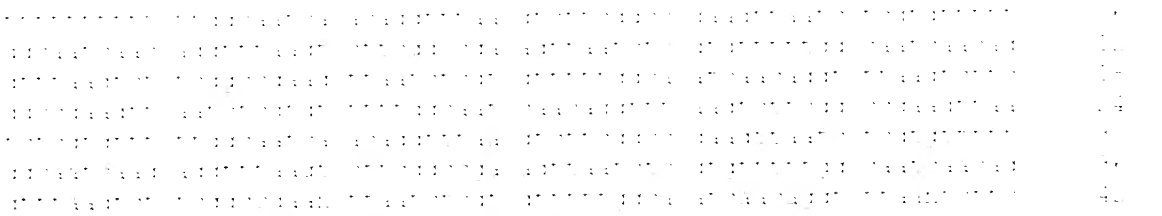
<210> 272
<211> 102
<212> DNA
<213> Homo sapiens

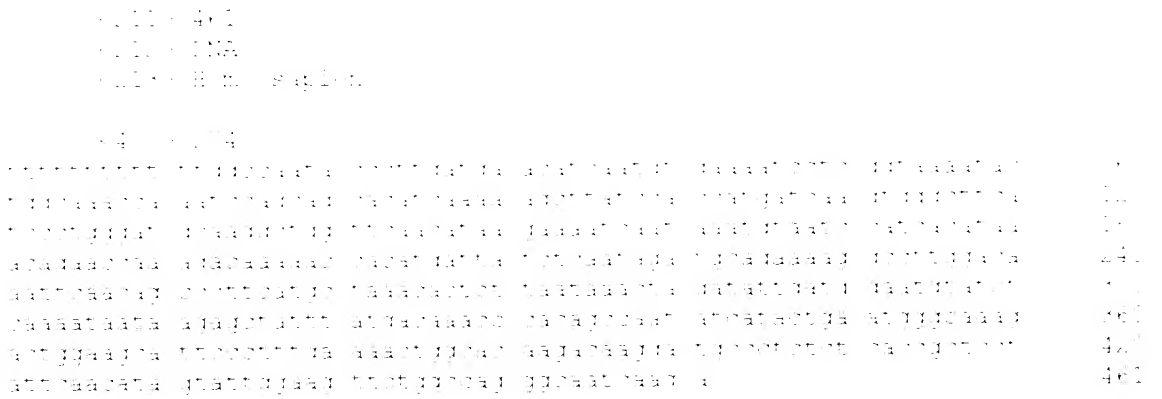
<400> 272

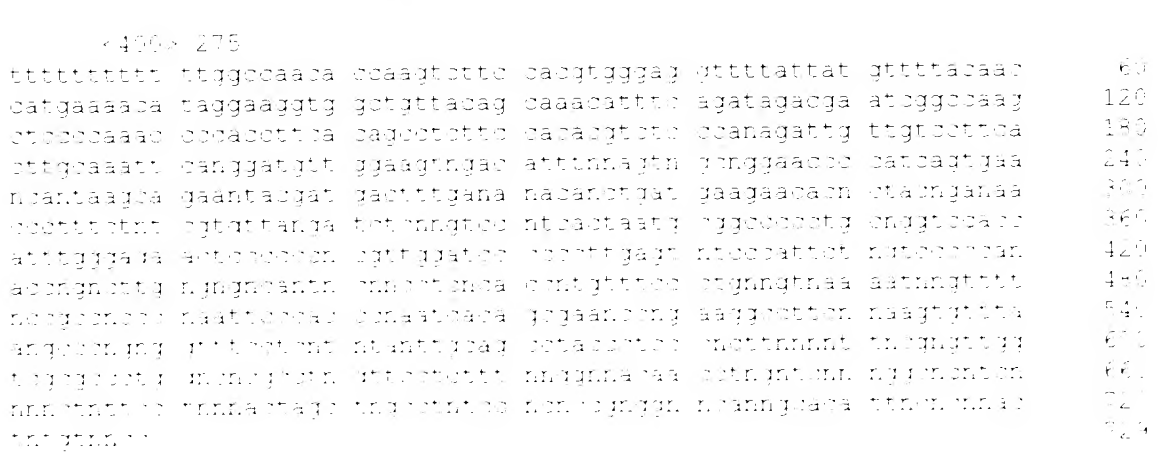


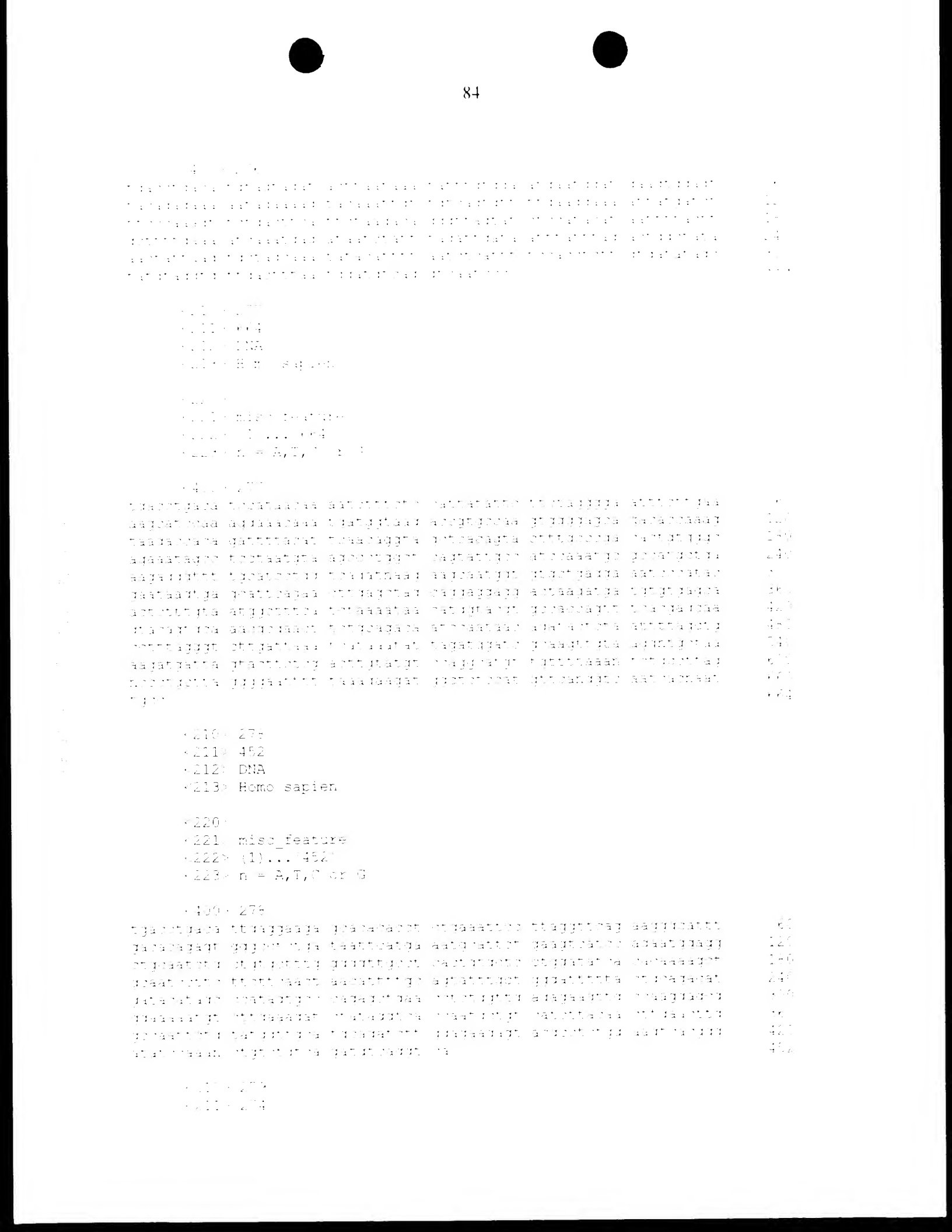
<210> 273
<211> 45
<212> DNA
<213> Homo sapiens

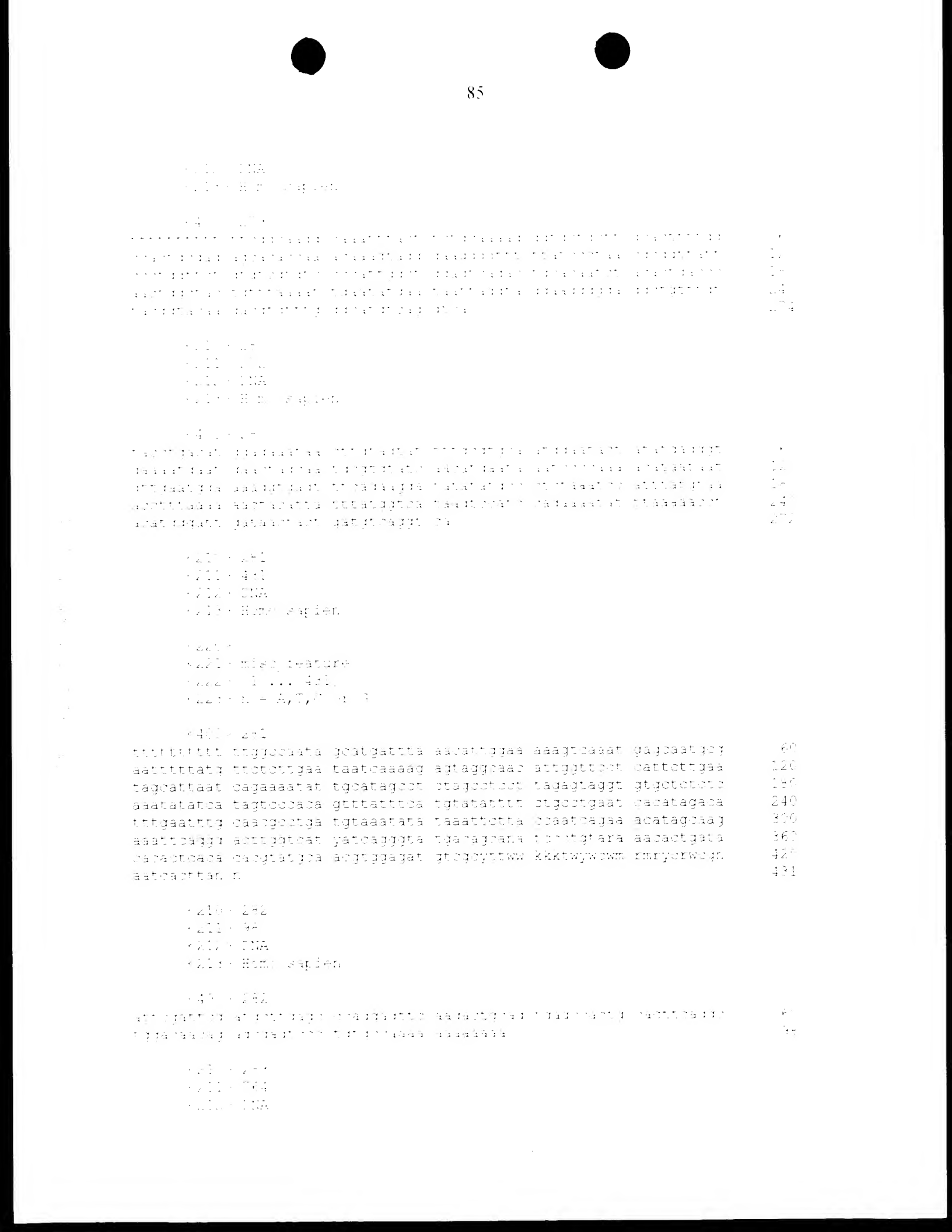
<220>
<221> misc_feature
<222> 1...45
<223> n = A,T,C or G











<211> 284
<212> DNA
<213> Homo sapien

<400> 284
aaagttaatt tacagtgatg aaaatcattt ttgtgaaa aaaa tttttgtgta attaaattct 60
attttcaaaa ttttaaaaaa ttttttaatt gatgatttaa tatgatttta ttgttaaatt 120
aaatttaatt tttaaaaata gttttaattt tatttga 157

<211> 285
<212> DNA
<213> Homo sapien

<400> 285
attcgatttgt actcagacaa caatatgtta agtggaagaa gtcagtcaca aaagagtaca 60
tactgtatga attcatttac attaagtgtc tagaatagtt aaatcgtaat agatagaaaa 120
tagatgagta gttgtttagg tctgagtaca 150

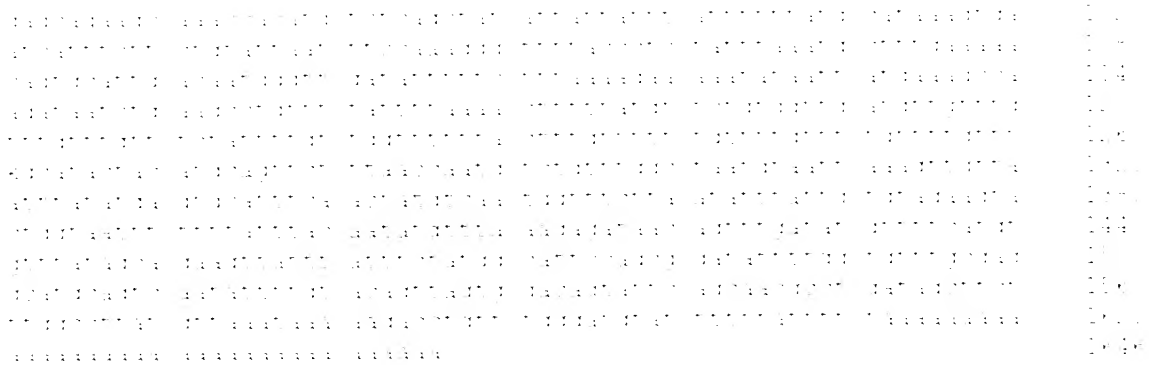
<211> 286
<212> DNA
<213> Homo sapien

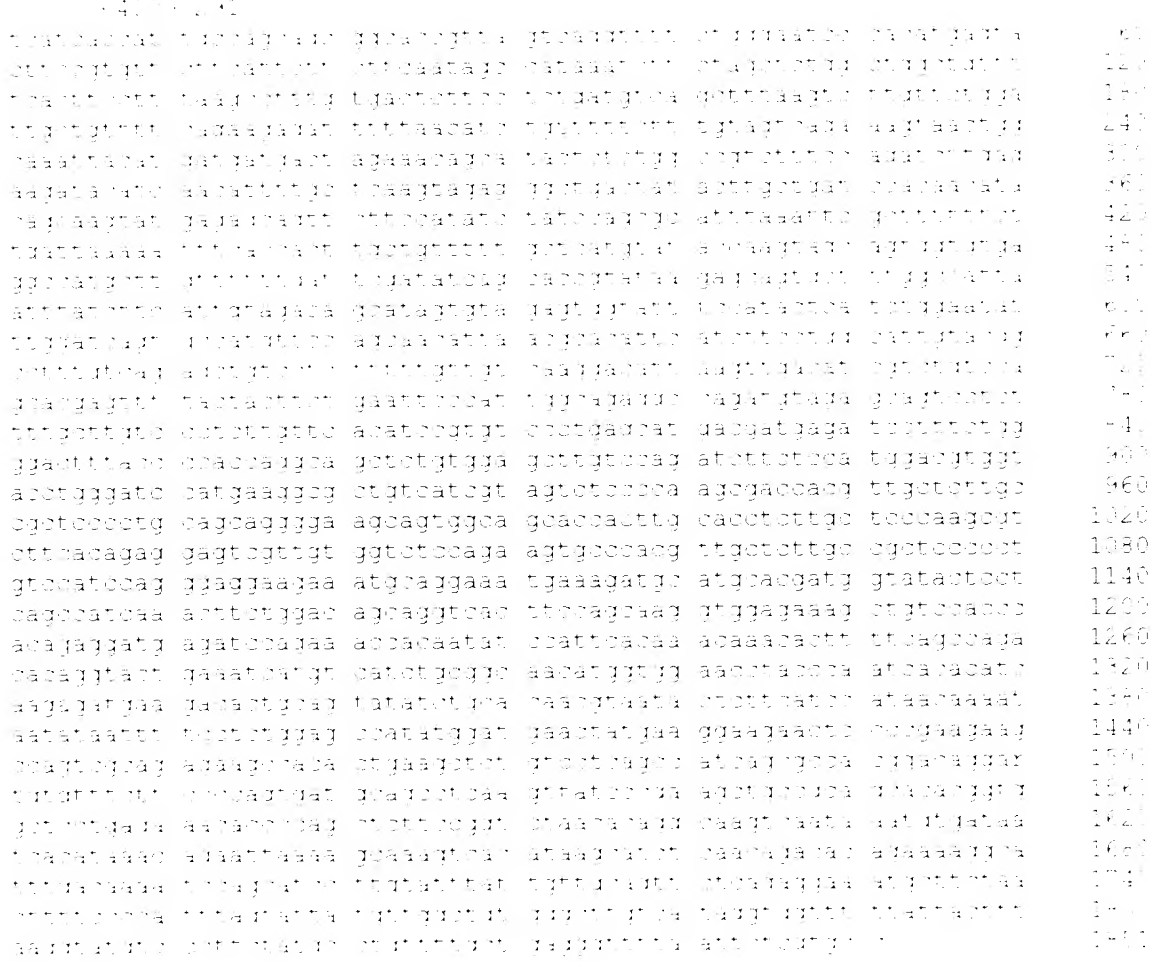
<400> 286

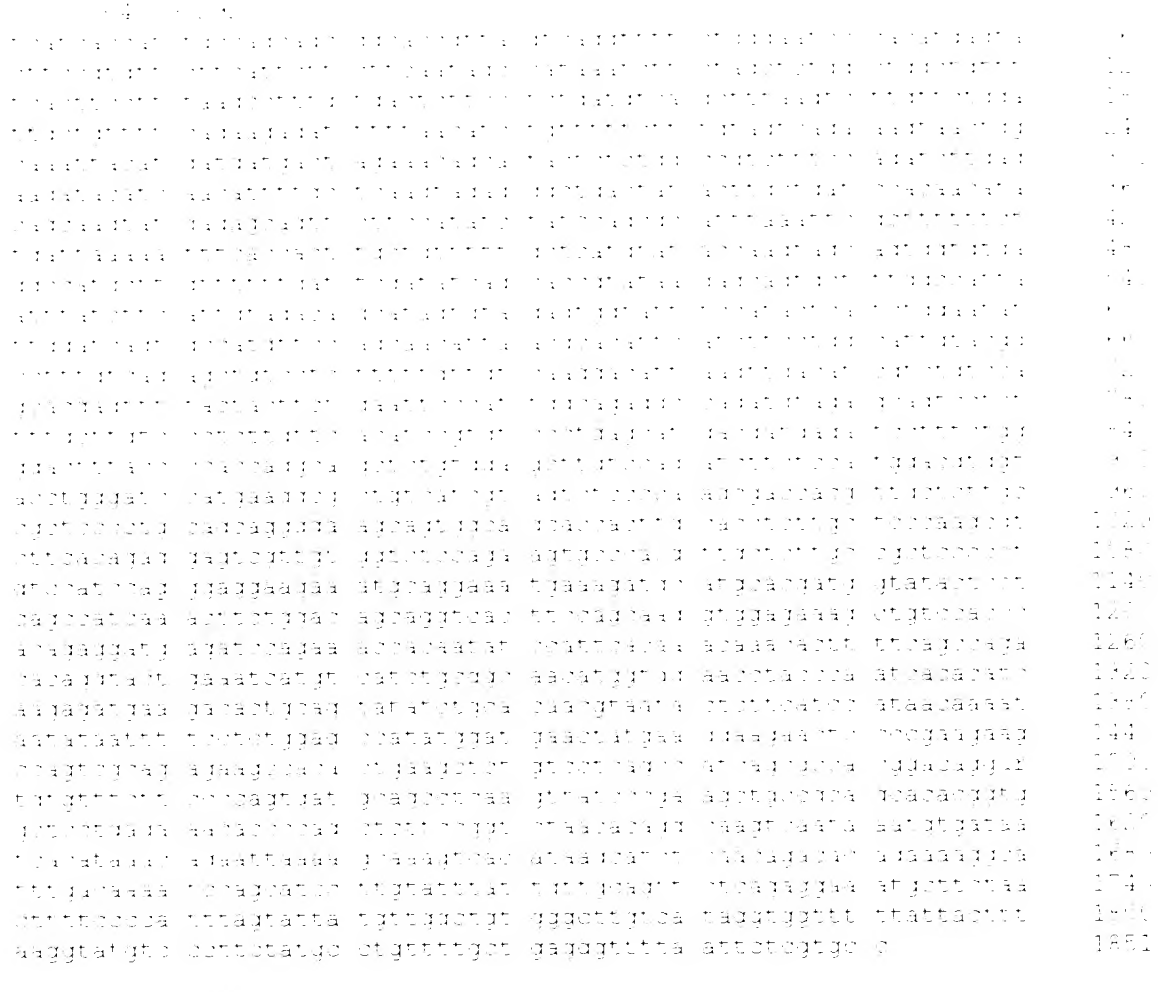
<400> 289

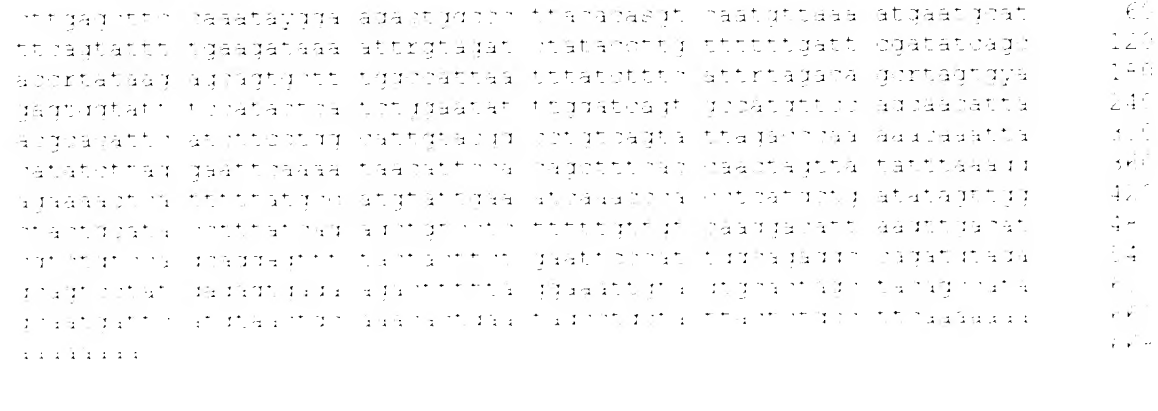
<210> 290
<211> 1646
<212> DNA
<213> Homo sapien

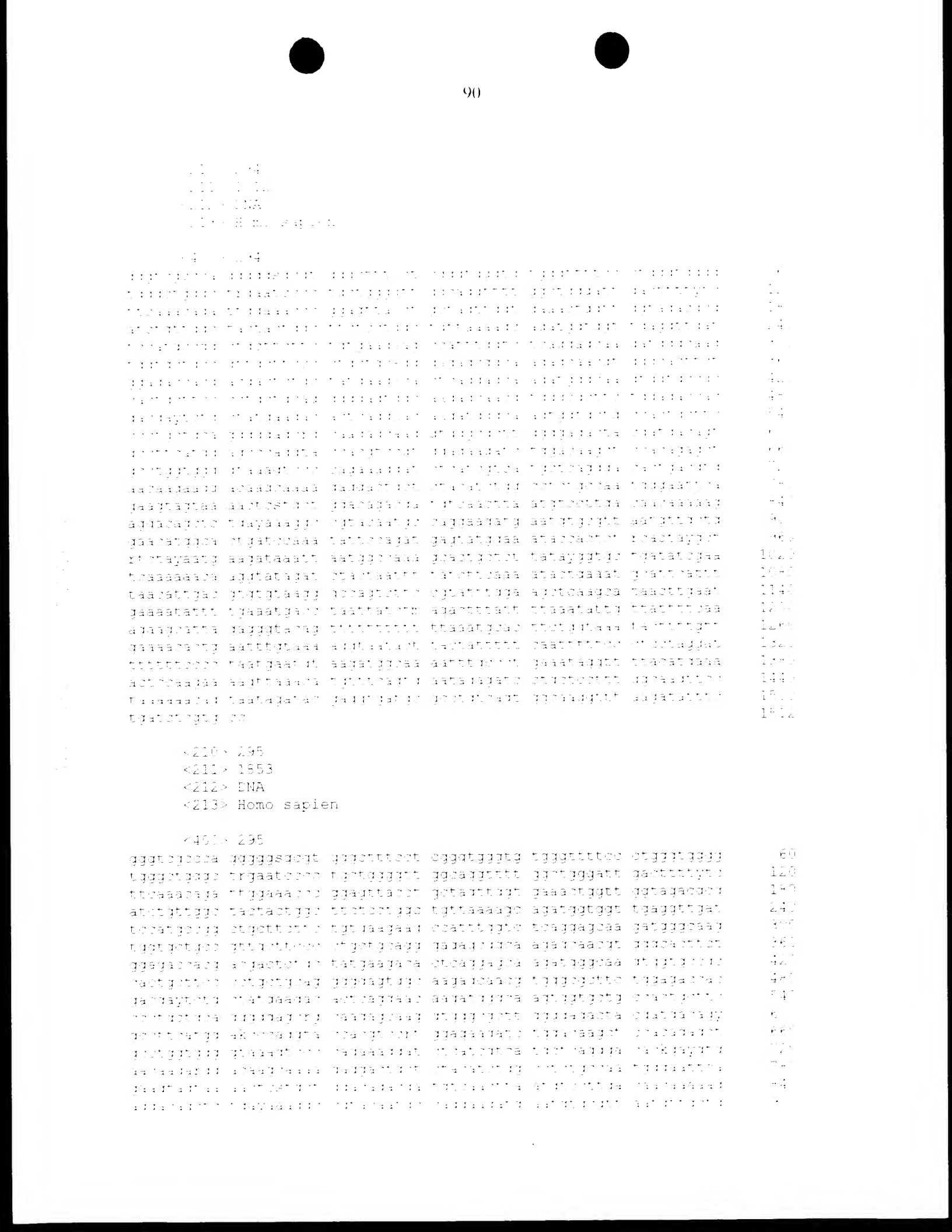
<400> 290



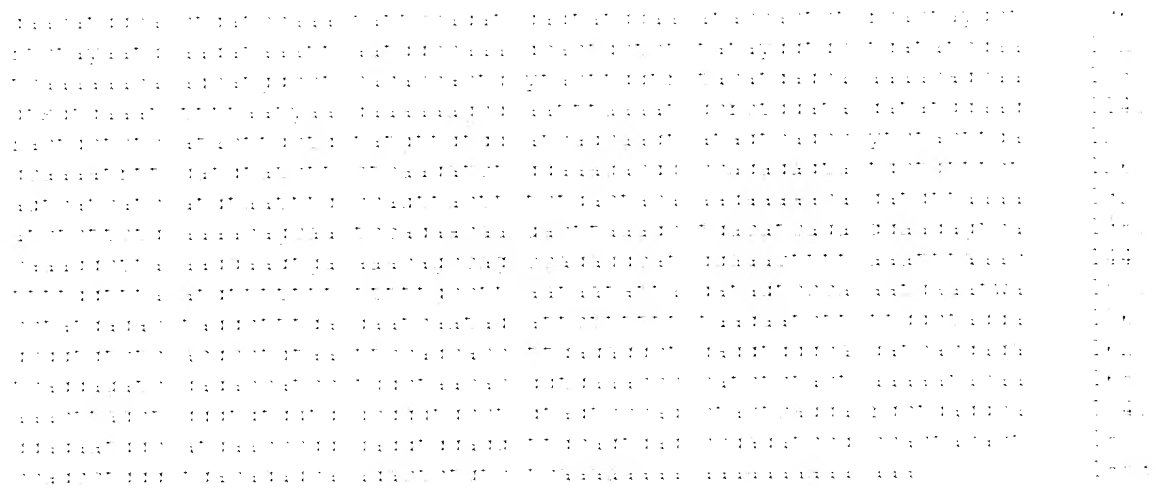


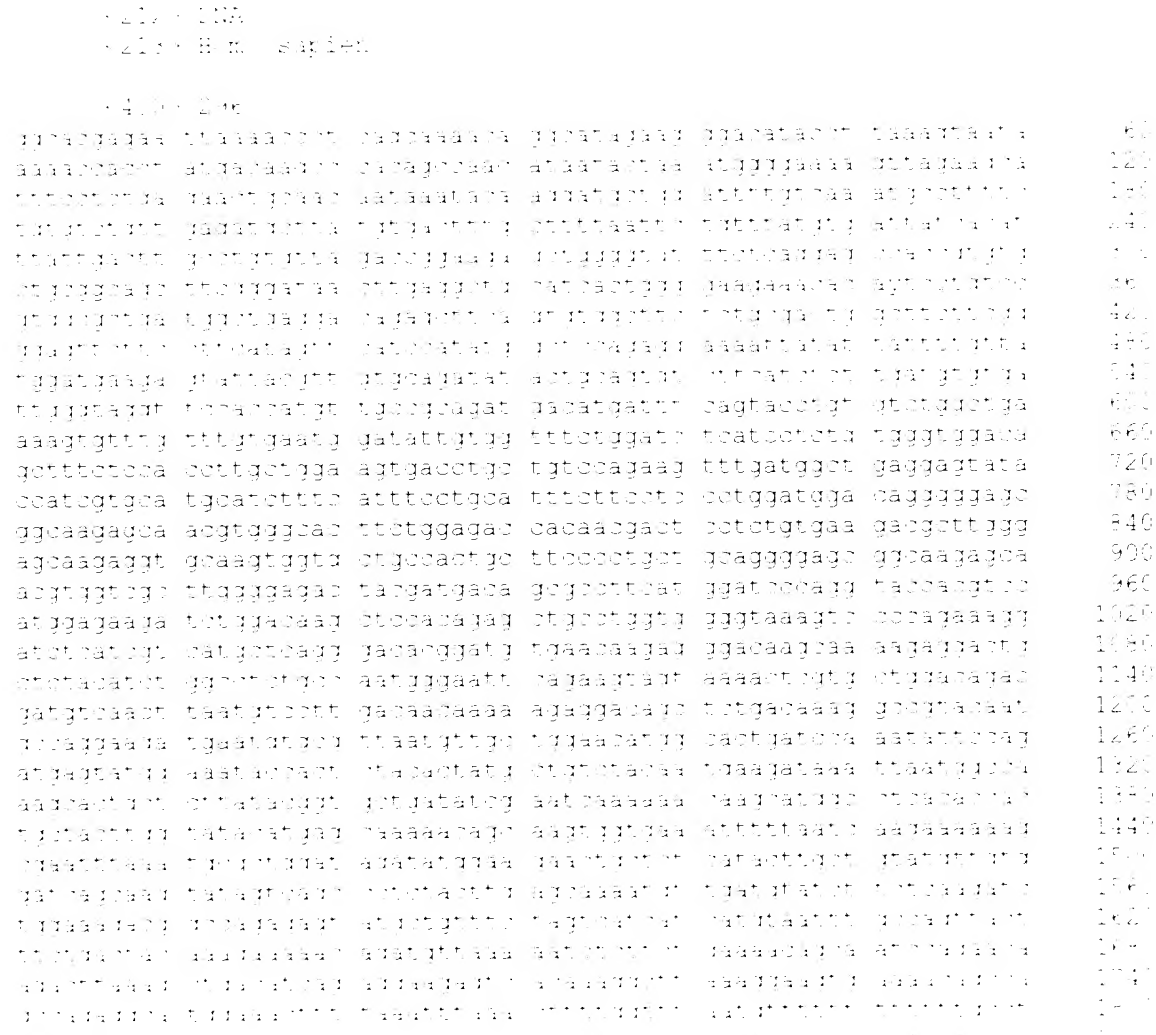


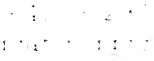




<210> 295
<211> 1853
<212> DNA
<213> Homo sapien
<400> 295







<210> 249
<211> 340
<212> PRT
<213> Homo sapien

<400> 249
Met Asp Ile Val Val Ser Gly Ser His Pro Leu Trp Val Asp Ser Phe
1 5 10 15
Leu His Leu Ala Gly Ser Asp Leu Leu Ser Arg Ser Leu Met Ala Glu
20 25 30
Glu Tyr Thr Ile Val His Ala Ser Phe Ile Ser Cys Ile Ser Ser Ser
35 40 45
Leu Asp Gly Gln Gly Glu Arg Gln Glu Gln Arg Gly His Phe Trp Arg
50 55 60
Pro Gln Arg Leu Leu Cys Glu Asp Ala Trp Glu Gln Glu Val Gln Val
65 70 75 80
Val Leu Pro Leu Leu Pro Leu Leu Gln Gly Ser Gly Lys Ser Asn Val
85 90 95
Val Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr
100 105 110
His Val His Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp
115 120 125
Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp
130 135 140
Val Asn Lys Arg Asp Lys Tyr Lys Arg Thr Ala Leu His Leu Ala Ser
145 150 155 160
Ala Asn Gly Asn Ser Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys
165 170 175
Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala
180 185 190
Val Gln Tyr Gln Val Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly
195 200 205
Thr Asp Pro Asn Leu Pro Asp Ser Thr Gly Asn Thr Thr Leu His Tyr

Ala Val Tyr Asn [illegible] Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr

Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu

Leu Gly Ile His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys

Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu

Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu

Glu Gln Asn Val Asp Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu

Ser Met Leu Phe Leu Val Ile Ile Met

<210> [illegible]
<211> 147
<212> PRT
<213> Homo sapien

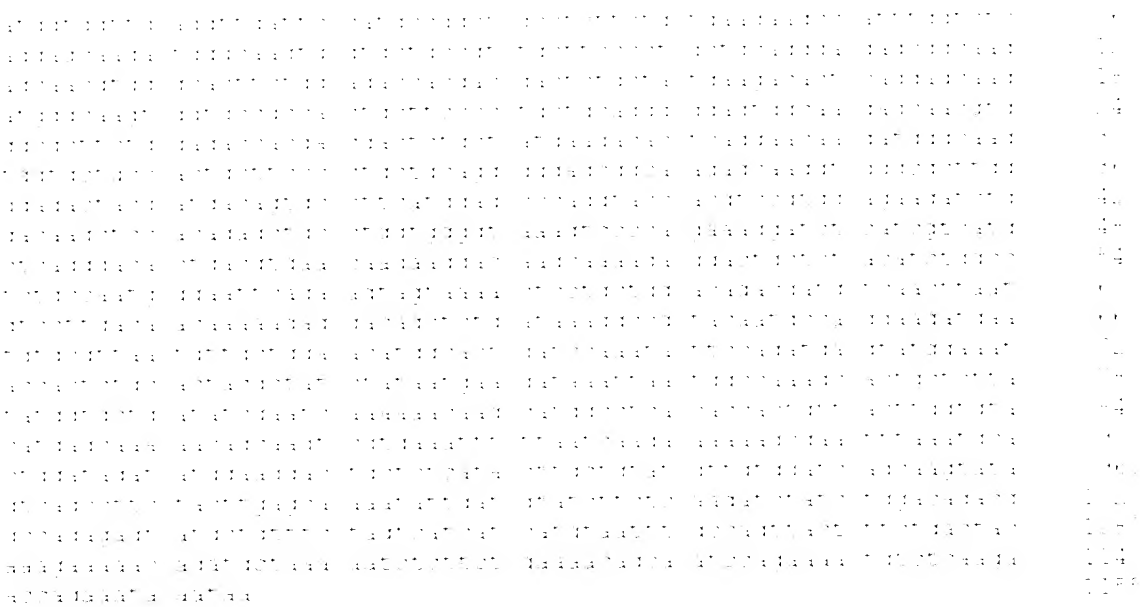
<220>
<221> VARIANT
<222> (1)...(147)
<223> Xaa = Any Amino Acid

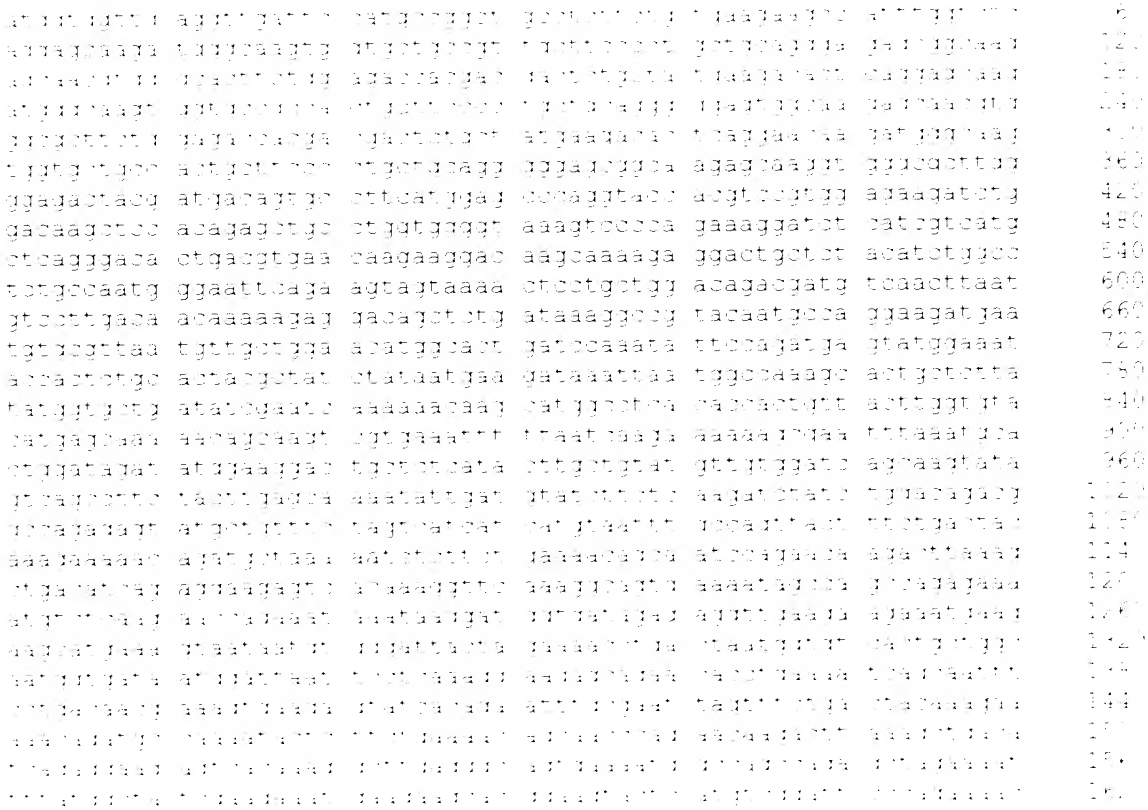
<400> [illegible]

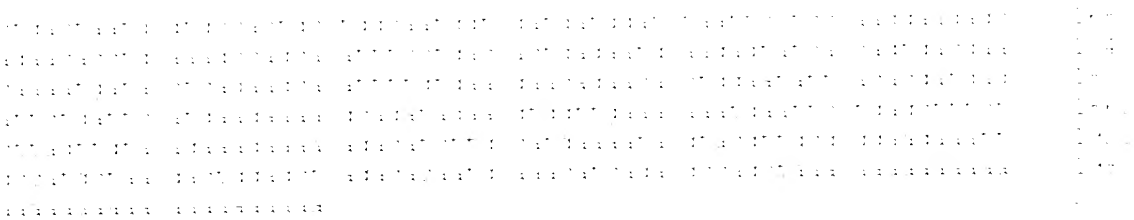
Met Thr Xaa Pro Ser Trp Ser Pro Gly Thr Thr Ser Val Glu Lys Ile
1 5 10 15
Trp Thr Ser Ser Thr Glu Leu Pro Trp Trp Gly Lys Val Pro Arg Lys
20 25 30
Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Xaa Asp Lys
35 40 45
Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu
50 55 60
Val Val Lys Leu Xaa Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp
65 70 75 80
Asn Lys Lys Arg Thr Ala Leu Xaa Lys Ala Val Gln Cys Gln Glu Asp
85 90 95
Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro
100 105 110
Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Xaa Tyr Asn Glu Asp
115 120 125
Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser
130 135 140
Lys Asn Lys Val
145

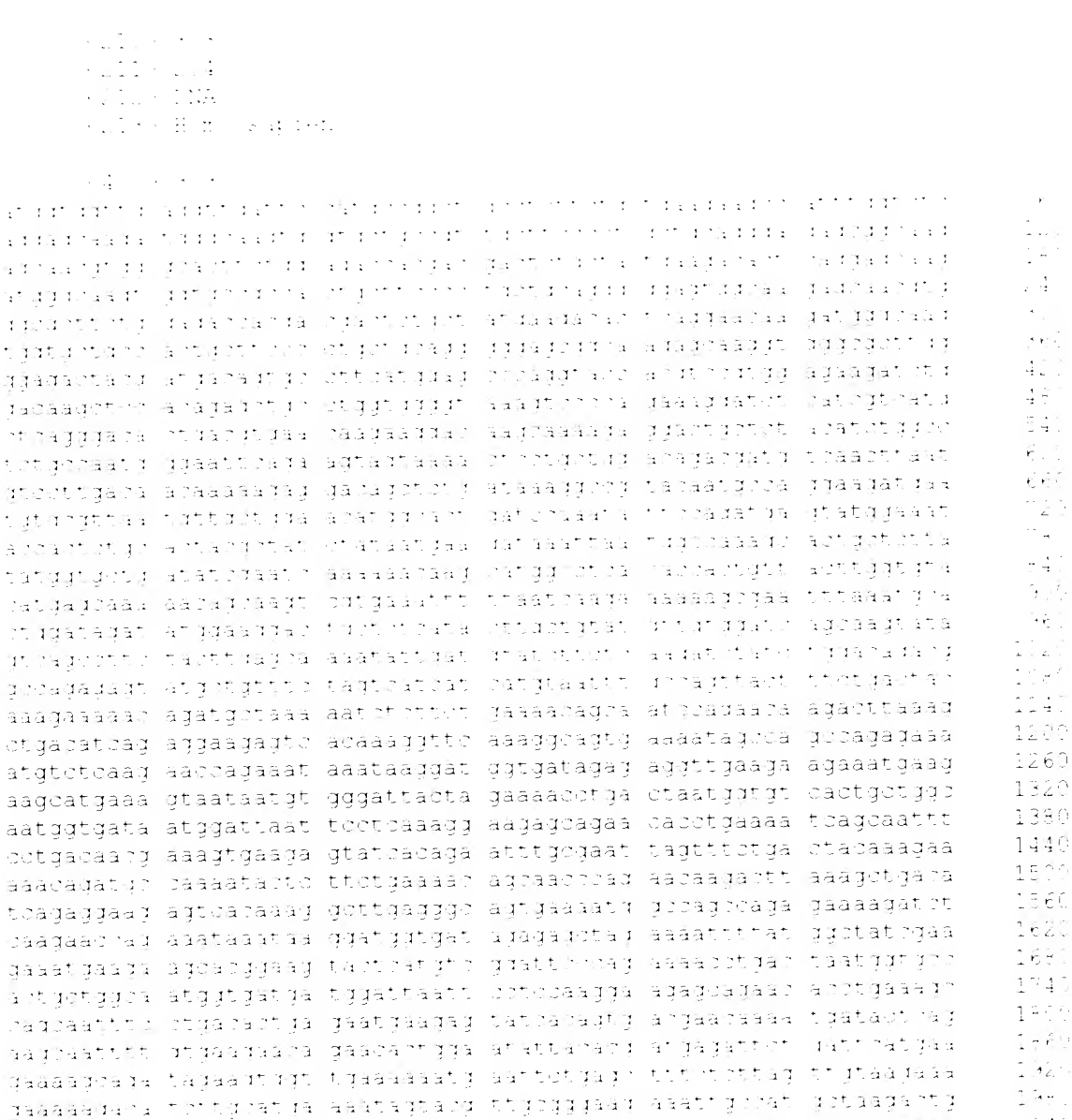
<210> [illegible]
<211> 1114
<212> DNA
<213> Homo sapien

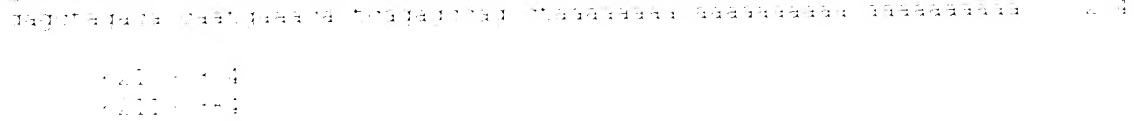
<400> [illegible]

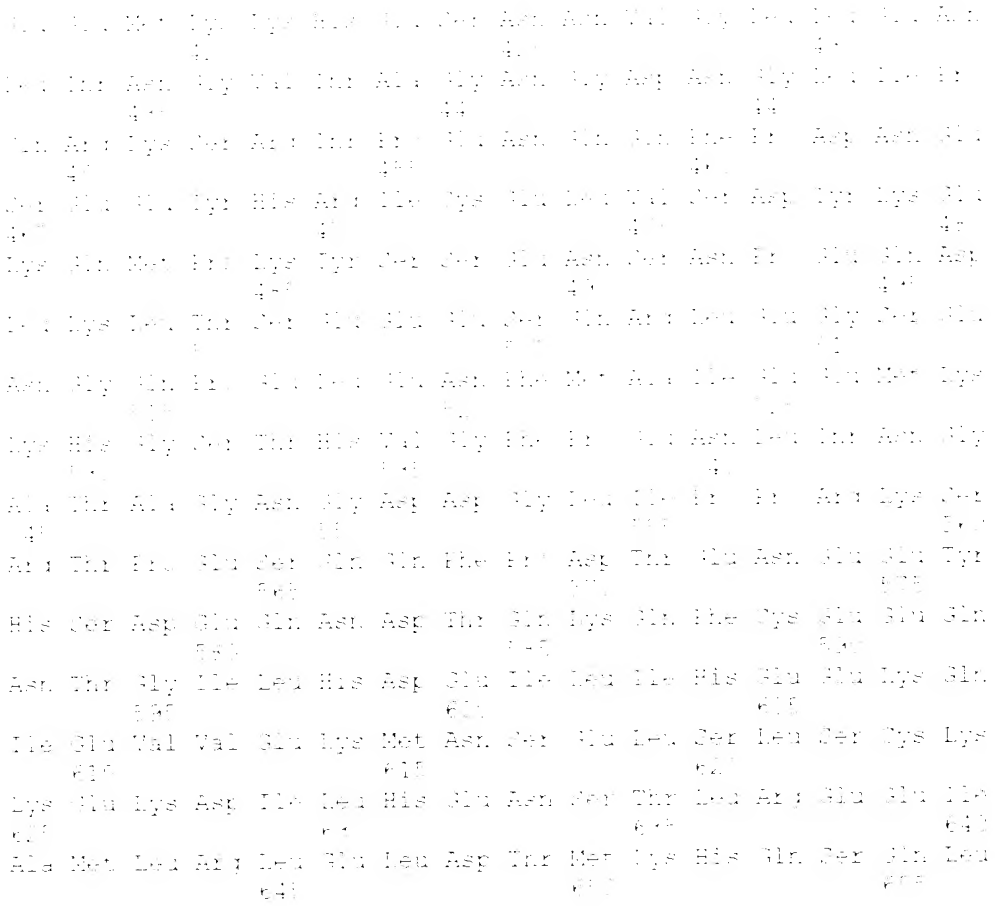






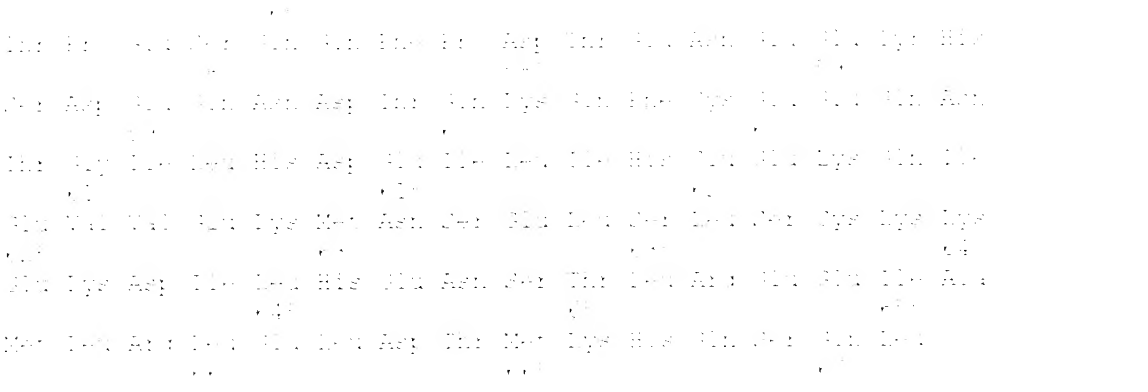


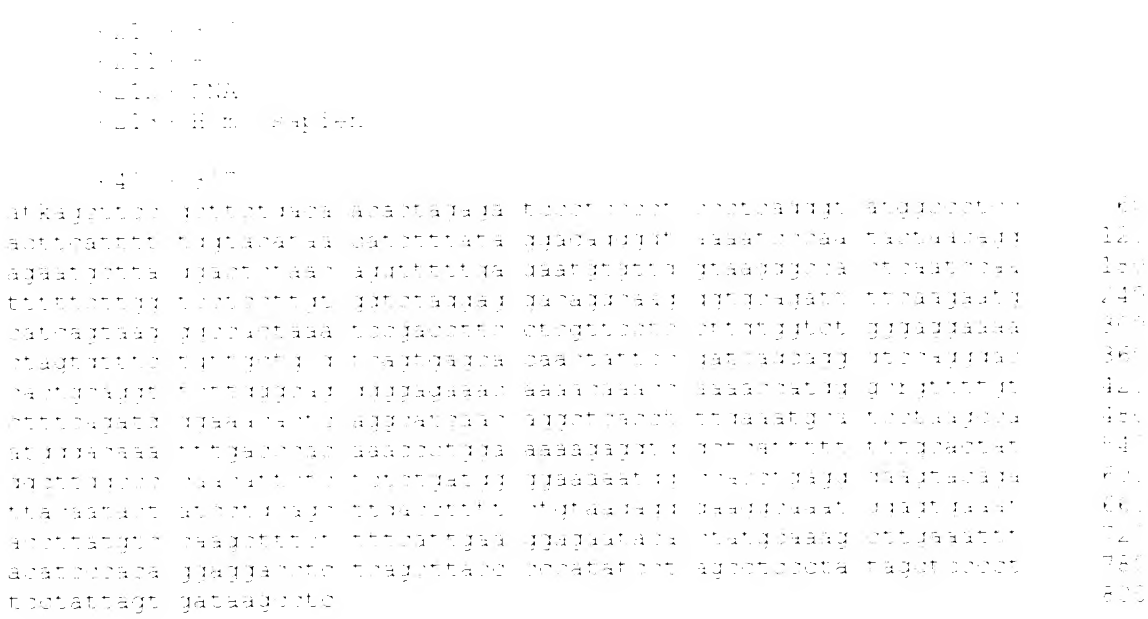


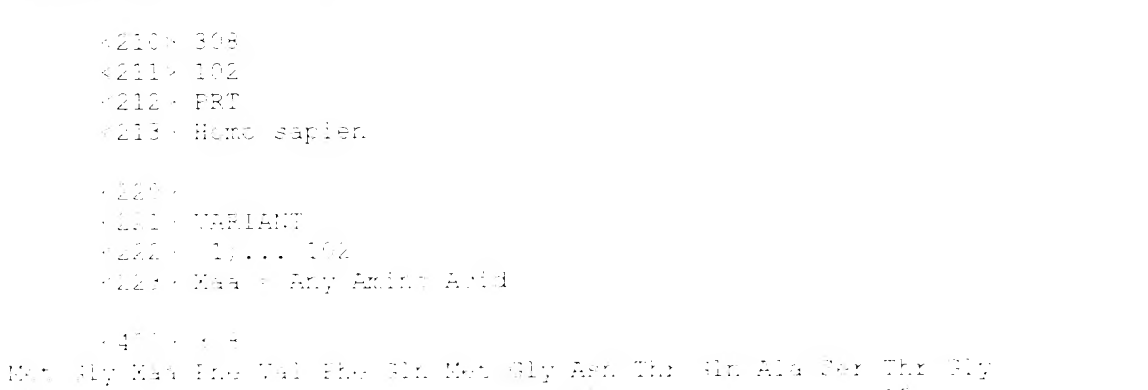


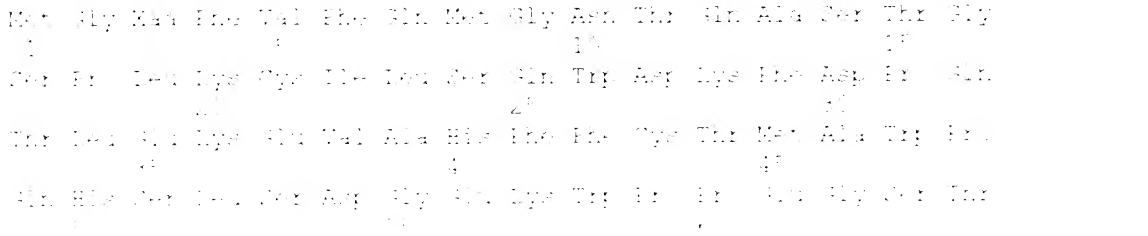
<211> 906
<211> 671
<212> PRT
<213> Homo sapien

<400> 306
Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
1 5 10 15
Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
20 30
Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
35 40 45
His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
50 55 60
Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
65 70 75 80
Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
85 90 95
Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
100 105 110
Gly Lys Ser Asn Lys Val Gly Ala Trp Gly Arg Tyr Asp Asp Ser Ala Phe
115 120 125
Met Gly Ile Arg Tyr His Val Arg Lys Leu Asn Leu Asp Lys Ile His









Asp Tyr Asn Ile Leu Lys Ile Ala Asp Leu Gly Cys Ala Arg Leu Asp

Tyr Ile Arg Leu Leu Glu Asp Asn Tyr Val Pro Arg Ala Ser Asn Tyr

Arg Ile Leu Gly Cys Lys Ala

<210> 310
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in the lab

<400> 310
Leu Met Ala Lys
1

<210> 311
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in the lab

<400> 311
Lys Leu Met Ala Lys Ala Leu Leu Leu
1 5

<210> 311
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in the lab

<400> 311
Gly Leu Thr Pro Leu Leu Leu Gly Ile
1 5

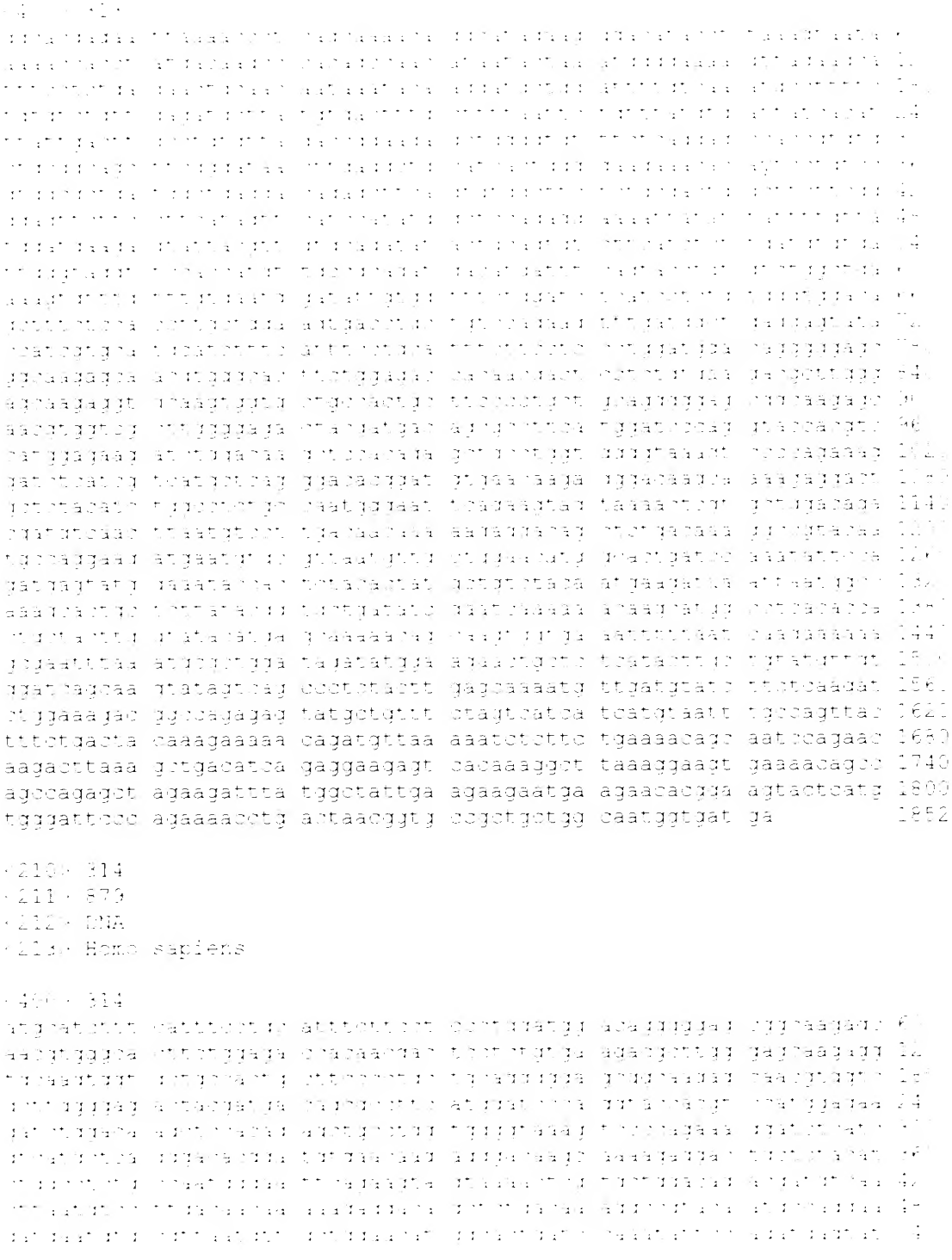
<210> 312
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in the lab

<400> 312
Lys Leu Val Leu Asp Arg Arg Tyr Thr Leu
1 5 10

<211> 1852
<212> DNA
<213> Homo sapiens

<400> 312



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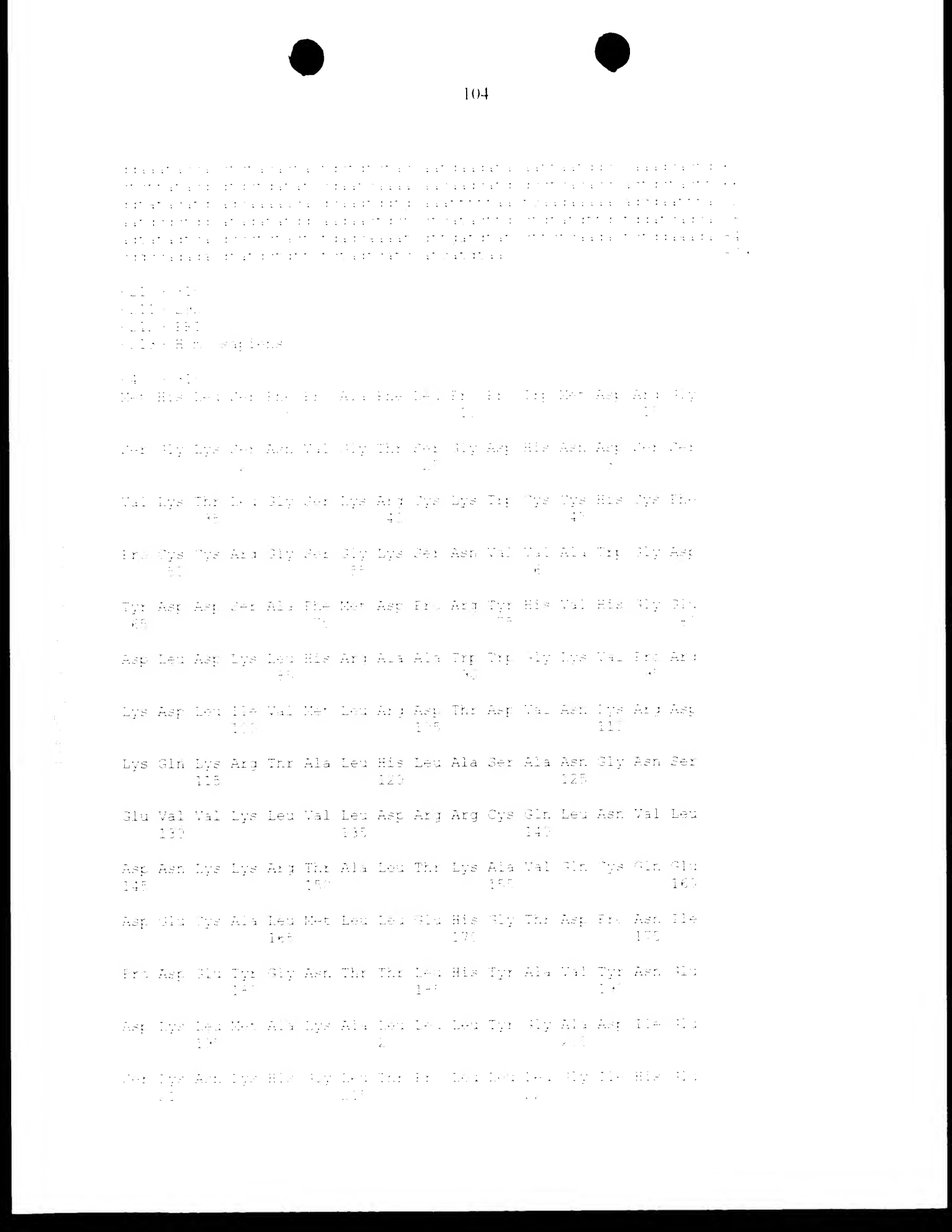

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<400> 319

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<400> 320

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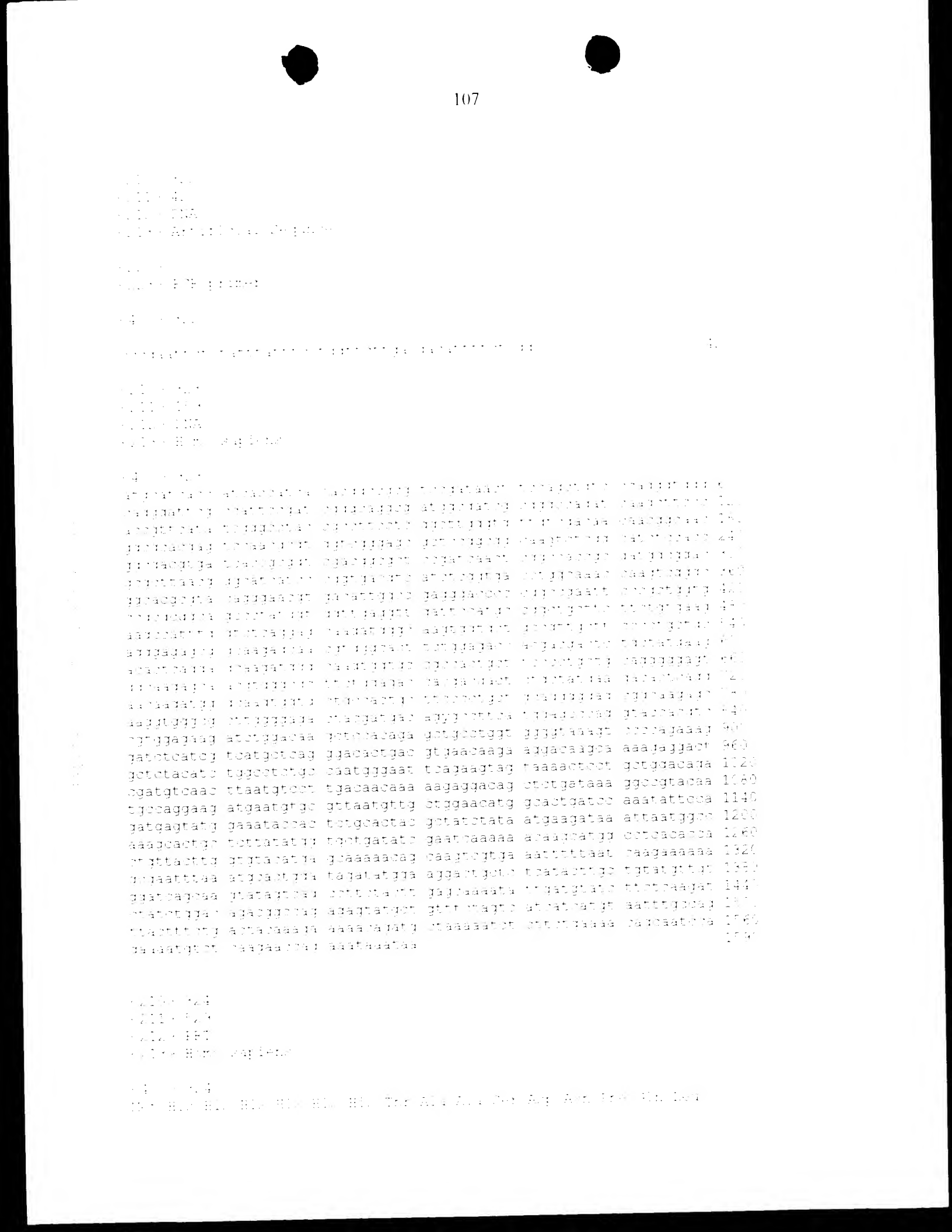

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Ala Leu His Leu Arg Ser Ala Asn Gly Asn Ser Thr Val Val Lys Leu
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Thr Ala Leu Ile Lys Ala Val Thr Tyr Thr Thr Asp Thr Tyr Ala Leu
Met Leu Leu Ala His Tyr Thr Asp Ile Asn Leu Ile Asp Thr Tyr Gly
Asn Thr Thr Leu His Tyr Ala Ile Tyr Asn Gly Asp Lys Leu Met Ala
Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His
Gly Leu Thr Pro Leu Leu Leu Gly Val His Glu His Lys Gln Gln Val
Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg
Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser
Ile Val Ser Leu Leu Leu Gln Gln Asn Ile Asp Val Ser Ser Gln Asp
Leu Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His
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Lys

<211> 126
<212> PRT
<213> Homo sapiens

<400> 126
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Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Met Gly Thr Ser Gly Asp
35 40 45

His Asp Asp Ser Phe Met Lys Met Leu Arg Ser Lys Met Gly Lys Cys
50 55 60

Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Thr Ser Asn Val
65 70 75 80

Gly Thr Ser Gly Asp His Glu Asn Ser Phe Met Lys Met Leu Arg Ser
85 90 95

Lys Met Gly Lys Trp Cys Tyr His Cys Phe Pro Tyr Cys Cys Arg Gly Ser
100 105 110

Gly Lys Ser Asn Val Gly Ala Trp Gly Asp Tyr Asp His Ser Ala Phe
115 120 125

Met Ile Ile Asn Tyr His Ile Asn Arg Val Asp Ile Asp Lys Leu His
130 135 140

Asn Asn Ala Trp Trp Gly Ile Val Ile Asn Tyr Asp Ile Val Met